Form 9-331 C
(May 1963)

SUBMIT IN TRIPLICATE*
(Other instructions on reverse side)

Form approved.
Budget Bureau No. 42-R1425.

UNITED STATES
DEPARTMENT OF THE INTERIOR
GEOLOGICAL SURVEY

APPLICATION FOR PERMIT TO DRILL, DEEPEN, OR PLUG BACK

RECEIVED
JAN 07 1985
DIVISION OF OIL, GAS & MINING

1a. TYPE OF WORK: DRILL [X] DEEPEN [ ] PLUG BACK [ ]

b. TYPE OF WELL: OIL WELL [X] GAS WELL [ ] OTHER — SINGLE ZONE [ ] MULTIPLE ZONE [ ]

2. NAME OF OPERATOR: Phillips Oil Company

3. ADDRESS OF OPERATOR: P. O. Box 2920, Casper, WY 82602

4. LOCATION OF WELL (Report location clearly and in accordance with any State requirements.*)
At surface: 660' FSL, 1980' FEL (SW SE)
At proposed prod. zone: Same

5. LEASE DESIGNATION AND SERIAL NO.: 14-20-603-247
6. IF INDIAN, ALLOTTEE OR TRIBE NAME: Navajo
7. UNIT AGREEMENT NAME: SW-I-4192
8. FARM OR LEASE NAME: Ratherford Unit
9. WELL NO.: #13-34
10. FIELD AND POOL, OR WILDCAT: Greater Aneth
11. SEC., T., R., M., OR BLK. AND SURVEY OR AREA: Sec. 13-T41S-R23E
12. COUNTY OR PARISH: San Juan
13. STATE: Utah

14. DISTANCE IN MILES AND DIRECTION FROM NEAREST TOWN OR POST OFFICE*: Approximately 3 miles southeast of Montezuma Creek, Utah

15. DISTANCE FROM PROPOSED* LOCATION TO NEAREST PROPERTY OR LEASE LINE, FT. (Also to nearest drlg. unit line, if any): 1980' West of Ratherford Unit lease line
16. NO. OF ACRES IN LEASE: 1600 Acres
17. NO. OF ACRES ASSIGNED TO THIS WELL: 40 Acres
18. DISTANCE FROM PROPOSED LOCATION* TO NEAREST WELL, DRILLING, COMPLETED, OR APPLIED FOR, ON THIS LEASE, FT.: 1229' North of #24-31
19. PROPOSED DEPTH: 5700' Desert Creek
20. ROTARY OR CABLE TOOLS: Rotary
21. ELEVATIONS (Show whether DF, RT, GR, etc.): 4682' ungraded ground
22. APPROX. DATE WORK WILL START*: First Quarter 1985

23. PROPOSED CASING AND CEMENTING PROGRAM

SIZE OF HOLE	SIZE OF CASING	WEIGHT PER FOOT	SETTING DEPTH	QUANTITY OF CEMENT
17-1/2"	13-3/8"	48#	100'	150 sx (circ to surface)
12-1/4"	9-5/8"	36#	1600'	600 sx (circ to surface)
8-1/2"	7"	23#, & 26#	5700'	600 sx (T.O.C. Approx. 2000')

Approval is requested to drill Ratherford Unit #13-34, a Desert Creek Development Oil well, to increase the ultimate recovery from the Ratherford Unit.

BOP equipment will be operated daily and tested weekly.

APPROVED BY THE STATE
OF UTAH DIVISION OF
OIL, GAS, AND MINING
DATE: 1/17/85
BY: John R. Baza

IN ABOVE SPACE DESCRIBE PROPOSED PROGRAM: If proposal is to deepen or plug back, give data on present productive zone and proposed new productive zone. If proposal is to drill or deepen directionally, give pertinent data on subsurface locations and measured and true vertical depths. Give blowout preventer program, if any.

24.

SIGNED R. E. Stuart TITLE Area Manager DATE December 26, 1984

(This space for Federal or State office use)

PERMIT NO. _____ APPROVAL DATE _____

APPROVED BY _____ TITLE _____ DATE _____

CONDITIONS OF APPROVAL, IF ANY:

*See Instructions On Reverse Side

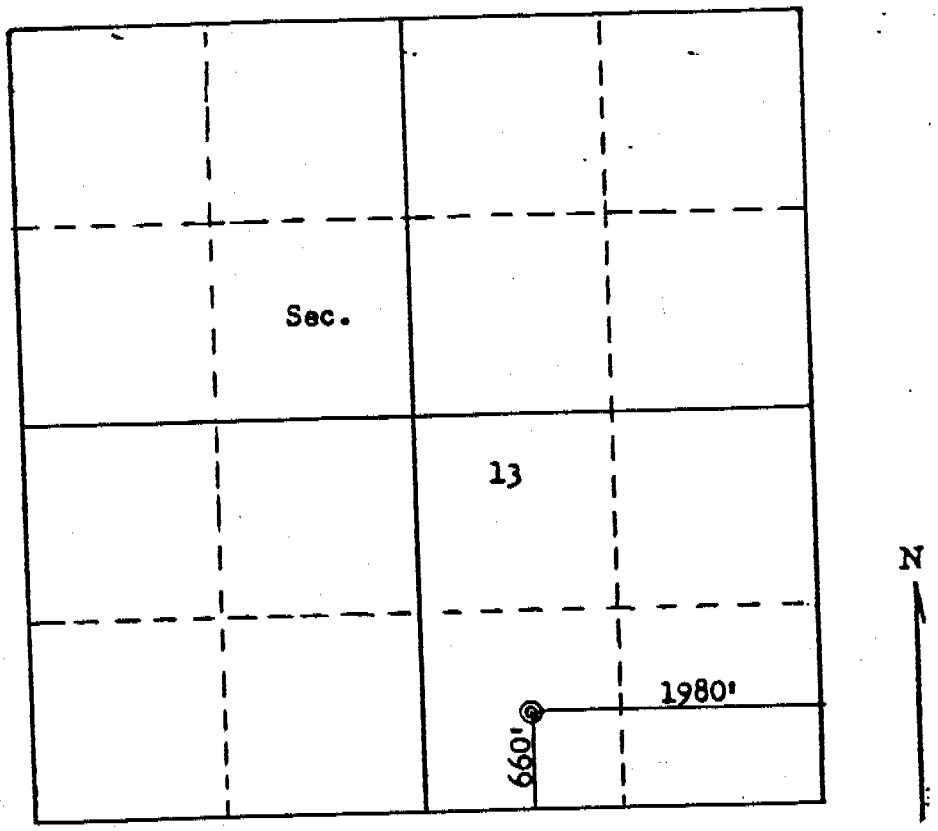
COMPANY PHILLIPS OIL COMPANY

LEASE RATHERFORD UNIT WELL NO. 13-34

SEC. 13 T. 41S R. 23E
San Juan County, Utah

LOCATION 660'FSL 1980'FEL

ELEVATION 4682 ungraded ground



SCALE—4 INCHES EQUALS 1 MILE

THIS IS TO CERTIFY THAT THE ABOVE PLAT WAS PREPARED FROM FIELD NOTE OF ACTUAL SURVEYS MADE BY ME UNDER MY SUPERVISION AND THAT THE SAME ARE TRUE AND CORRECT TO THE BEST OF MY KNOWLEDGE AND BELIEF.

SEAL

Registered Land Surveyor.
#3950
FRED S. KERR, JR.

SURVEYED July 1, 1984

FARMINGTON, N. M.

RATHERFORD UNIT #13-34

Supplement to Form 9-331C "Application for Permit to Drill, Deepen, or Plug Back."

DRILLING PROGRAM

1. Surface formation is the Dune Sand, which consists of loose windblown sand, age-recent.

   Estimated tops of geologic markers:

   Shinarump . . . . . 2149'
   DeChelly . . . . . 2513'
   Hermosa . . . . . 4420'
   Desert Creek Zone I . . . . . 5427'

2. Brackish water-bearing sands are expected in the Navajo, Wingate, and DeChelly formations. Oil is expected to be encountered in the Ismay and Desert Creek formations. The top of cement will be approximately at 2000'.

3. Blow-out preventers will be 10" Series 900 equipment to be tested initially to 3000 psi. They will be inspected and operated daily and pressure tested weekly to 1500 psi. Weekly pressure tests will be supervised by representatives of Phillips Oil Company and the drilling contractor. Tests will be recorded on the daily drilling report which will remain on the rig floor during drilling operations. BOP tests will be conducted in accordance with Phillips standards, copy attached.

4. a. Proposed Casing Program:

   1. Conductor casing:

      100' 13-3/8" 48#/ft H-40 ST&C new

   2. Surface casing:

      1600' 9-5/8" 36#/ft K-55 ST&C new
      Surface casing will be tested to 1500# before drilling out.

   3. Production casing:

      5700' 7" 23# & 26#/ft K-55 ST&C new
      Production casing will be tested to 3000#.

b. Proposed Cementing Program:

1. Conductor Casing:

Conductor casing will be cemented with 150 sks Class B cement. Cement will be brought to surface.

2. Surface Casing:

Surface casing will be cemented with 300 sks "light" cement followed with 300 sks Class B cement. Cement will be brought to surface.

3. Production casing:

Production casing will be cemented with "light" cement followed with Class B cement. For cement volume, caliper will be used with 15% excess. The top of the cement should be around 2000'. If other zones with hydrocarbon potential are encountered, they will be covered with cement.

c. Auxiliary Equipment:

Auxiliary equipment will include upper and lower kelly cocks, a drill string safety valve, and a pit level indicator.

5. Drilling Fluid:

Drilling fluid will be a fresh water based mud system. Spud mud is gel and water with a weight of 8.4-8.8 ppg. From the surface to approximately 1600', gel and water will be used. Mud weight may be up to 9 ppg to control water flow from the Wingate formation. A slurry of 8.6-9.5 ppg, 32-38 viscosity, and less than 15cc/30 min. water loss will be used from 1600'-5200'. Mud weight may be increased to 10.4 ppg if a water flow is encountered. From 5200' to total depth mud properties will be 10.5-12.5 ppg, 40-45 viscosity, and below 10 cc water loss.

Adequate quantities of mud materials will be stored at the location to equal the volume of the rigs complete circulating system. A flow sensor will be used.

6. Testing, logging, and coring:

The logging program will consist of DLL, GR, SP, and Caliper from T. D. to the surface casing. A FDC/CNL and a Micro-proximity log will be run from T. D. to 4300'. A temperature or cement bond log will be run to determine cement top. No coring or drill stem tests are planned.

7. Downhole Conditions:

Drilling in the area indicates no abnormal pressures, temperatures, or hydrogen sulfide gas.

8. Phillips anticipates starting operations in the first quarter of 1985. Drilling operations are estimated to take fifteen days per well.

CULTURAL RESOURCE REPORT

Abajo Archaeology has prepared a cultural resource inventory of the subject wellsite. A copy of the report has been sent to the BLM Farmington office. Pertinent information regarding the subject well is attached.

SURFACE USE PROGRAM

1. Existing Roads

   a. Access to existing lease roads is approximately 3 miles southeast of Montezuma Creek, Utah.

   b. The existing roads will be maintained in the same or better condition.

   c. Refer to the attached access road map for road information.

2. Access Roads

   Planned upgrading of existing access roads is shown on the attached map.

3. Location of Existing Wells.

   Locations of existing wells are shown on the attached maps.

4. Production from the proposed well will be piped to Ratherford Unit Tank Battery #2, located in the NW SE Sec. 12-T41S-R23E San Juan County, Utah. The flowline will be visible from the existing lease roads. A plat of the proposed leadline is attached.

5. Water Supply

   a. The source of water to drill the subject well is from the River Booster, NE/4 Sec. 5., or from the Water Injection Plant, SE/4 Sec. 17 in T41S-R24E, San Juan County, Utah.

   b. The drilling water will be trucked from the water source to the subject well.

   c. A water supply well will not be drilled on the lease.

6. Construction Materials

   a. Only native soils will be used for construction of wellsite and the access road.

b. Pit run rock will be used on the wellsite and access road when needed.

c. The above materials are owned by the Navajo Tribe.

7. Waste Disposal

a. Cuttings: Cuttings will be contained in a fenced reserve pit until dry enough to cover. Upon abandonment, the reserve pit area will be backfilled, shaped to natural topography, and seeded.

b. Drilling Fluid: Drilling fluid will be contained in a fenced reserve pit until dry enough to cover. Upon abandonment, the reserve pit area will be backfilled, shaped to natural topography, and seeded.

c. Garbage/Trash: All garbage and trash will be put in the burn pit. The burn pit will be fenced on four sides. After the burn pit is no longer in use, the trash and garbage will be covered with a minimum of 4 feet of fill.

d. Salt: No salts are anticipated on this well. If salt is present, it will be disposed of in the reserve pit.

e. Chemicals: Chemicals will be disposed of in the reserve pit.

f. Sewage: Dry chemical toilets will be used.

8. Ancillary Facilities

No ancillary facilities are required.

9. Well Site Layout.

a. Refer to attached Rig Layout plat

b. There are no plans to line the reserve pit unless porous soil materials are encountered during construction.

10. Surface Reclamation Plans

a. Construction Program: A cross section of the drill site showing cuts and fills is attached.

b. Well Abandonment: All disturbed areas will be shaped to the natural topography and seeded in accordance with BLM requirements.

c. Producing Well: Those areas not needed for production purposes will be recontoured to the surrounding topography. Seeding will be in accordance with BLM requirements.

d. Pipelines and flowlines: Flowlines will be above ground and follow or be visable from existing roads.

e. Rehabilitation will begin as soon as possible, considering weather and other factors, and proceed per recommendation of the BLM. The reserve pit will be reclaimed once it dries.

11. Surface Ownership: The wellsite location, access road and leadline are on the Navajo Indian Reservation. No dwellings are in the proposed drilling area.

12. Other information:

The reserve pit will be fenced on three sides during drilling and on the fourth side after the rig is moved out.

13. Operator's Representative and Certification.

a. Field Representative:

A. E. Stuart
P. O. Box 2920
Casper, Wyoming 82602
307-237-3791

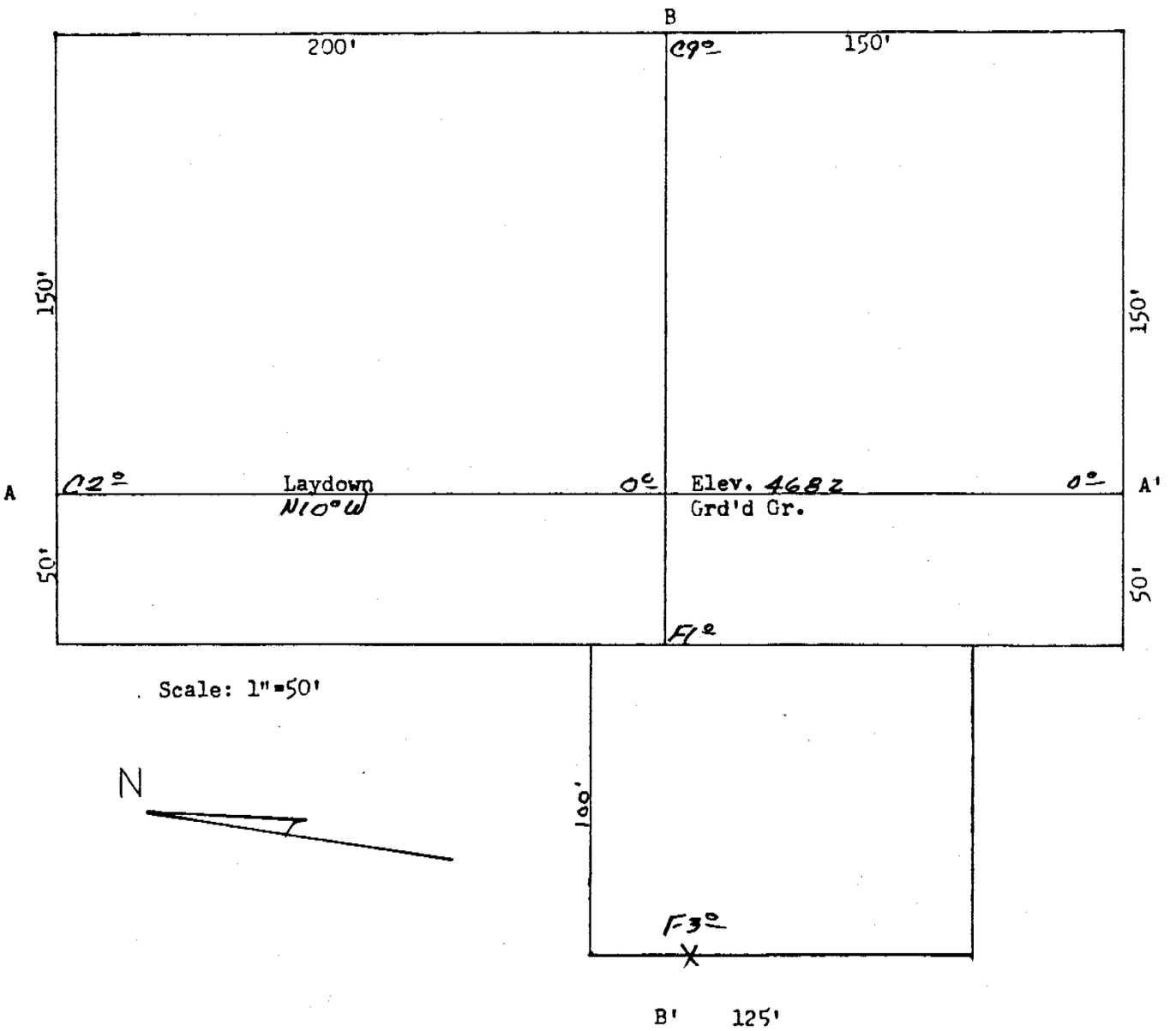
I hereby certify that I or persons under my direct supervision have inspected the proposed drill site and access route; and I am familiar with the conditions which currently exist; that the statements made in this plan are to the best of my knowledge true and correct; and that the work associated with operations proposed herein will be performed by Phillips Oil Company and its contractors and subcontractors in conformity with this plan and the terms and conditions under which it is approved. This statement is subject to the provisions of the 18 U.S.C. 1001 for the filing of a false statement.

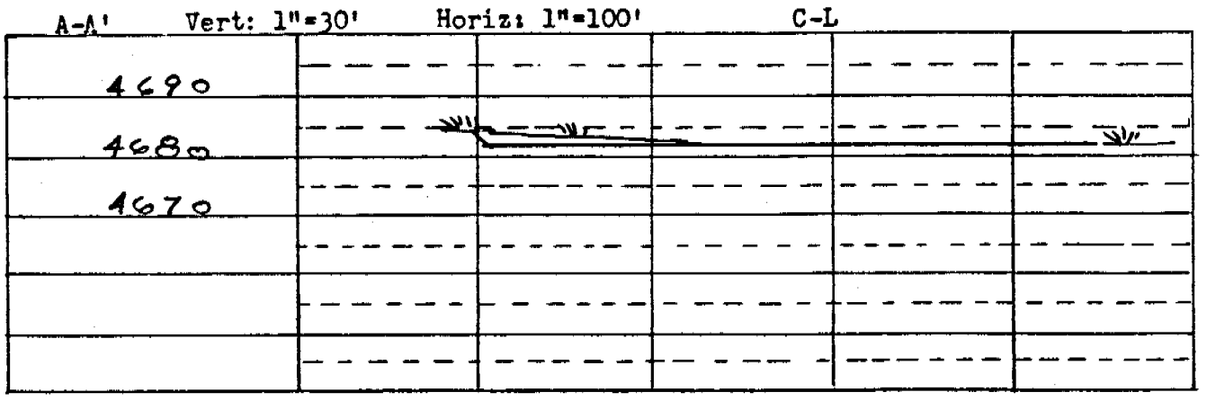
Date December 28, 1984

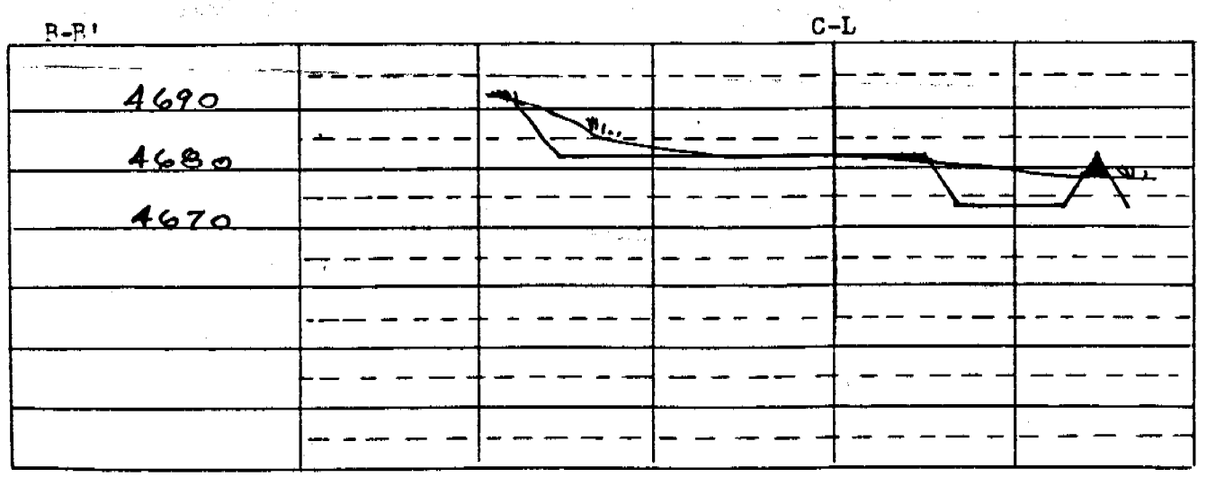
A. E. Stuart
Area Manager

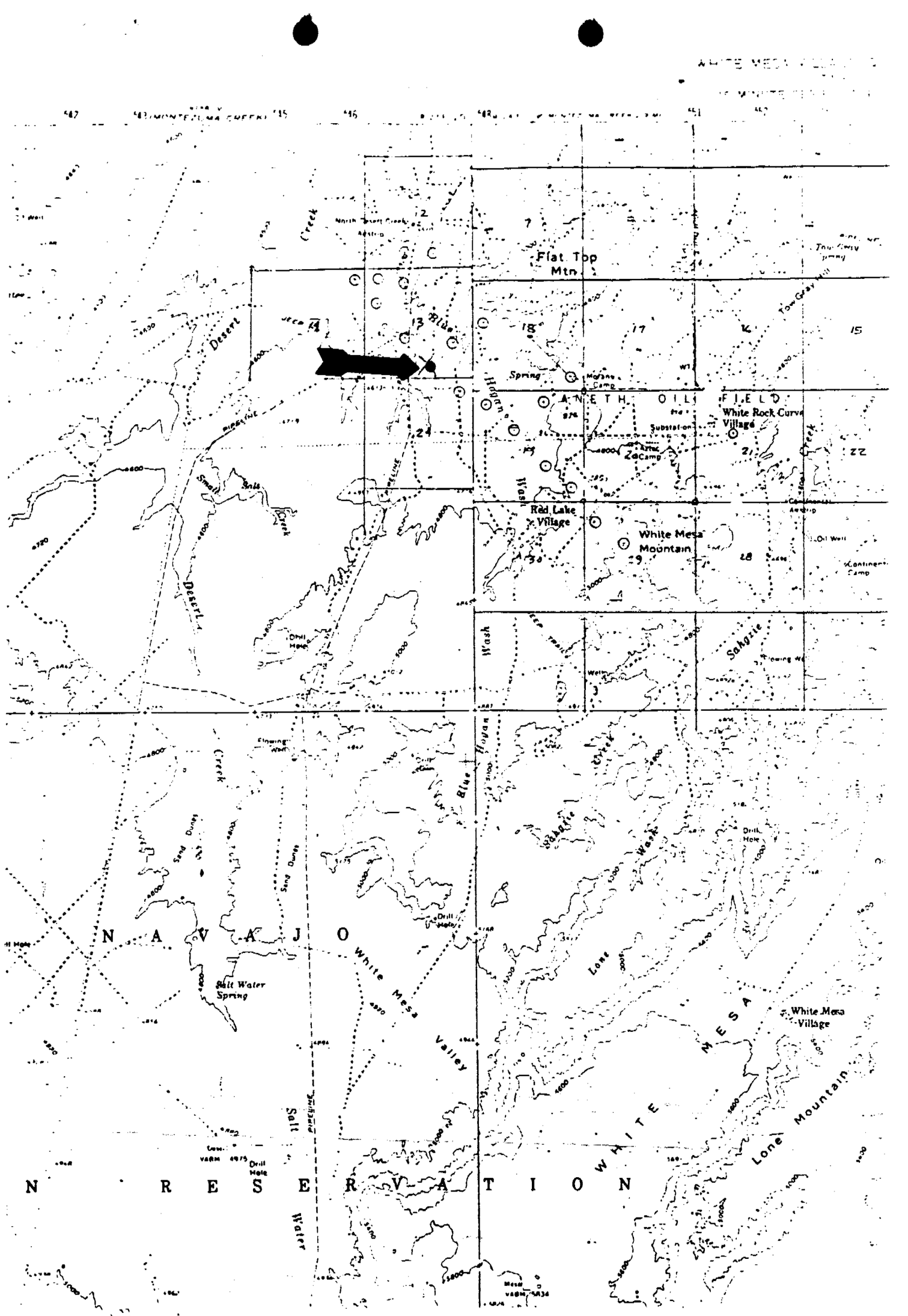
BJM/fb:lt(18)
Casper - RC

Profile for
PHILLIPS OIL COMPANY #13-34 RATHERFORD UNIT
660'FSL & 1980'FEL Sec. 13-T41S-R23E
SAN JUAN COUNTY, UTAH









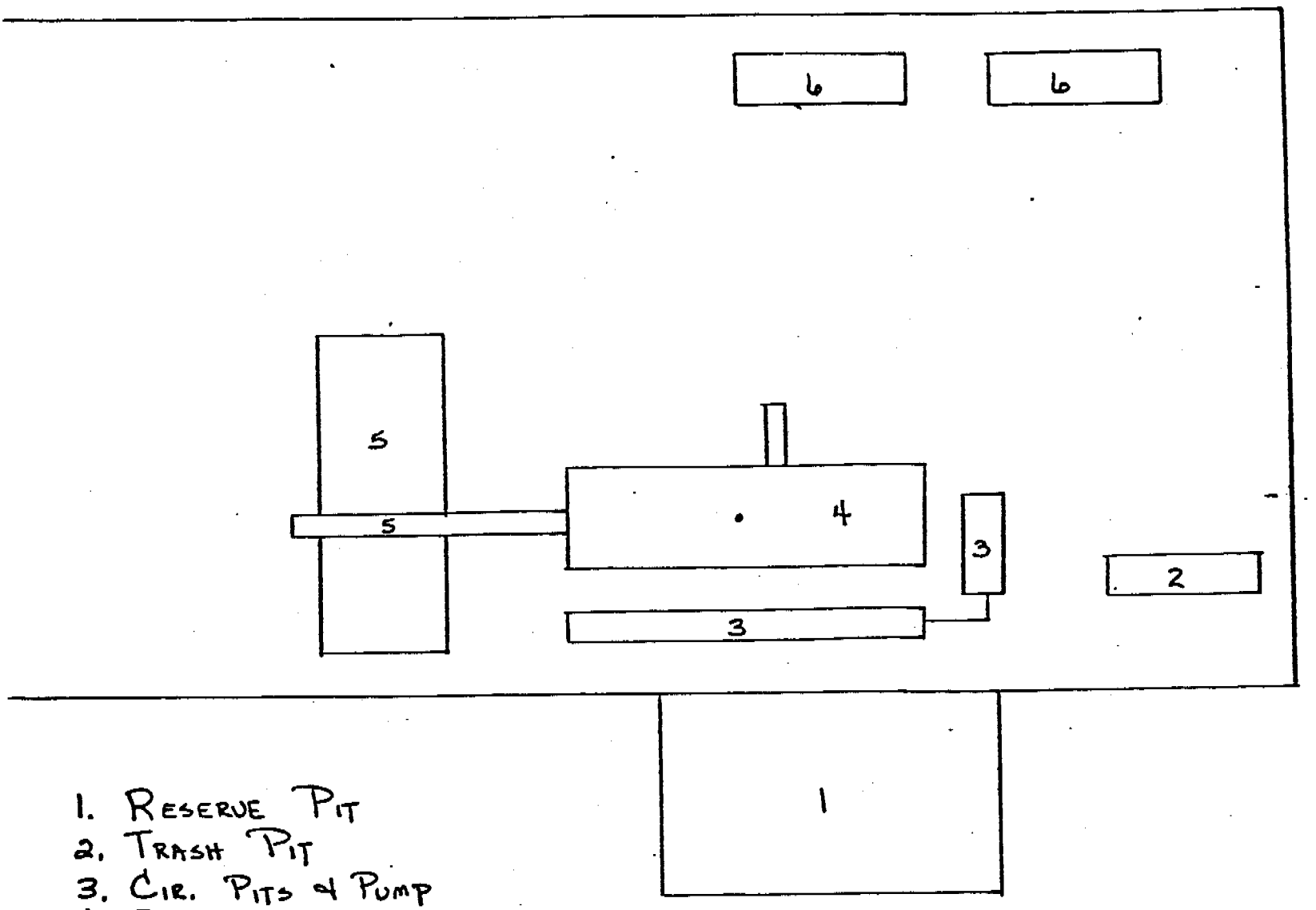
Vicinity Map for
PHILLIPS OIL COMPANY #13-34 RATHERFORD UNIT
660'FSL 1980'FEL Sec. 13-T41S-R23E
SAN JUAN COUNTY, UTAH

N

Fatherford Unit

#13-34

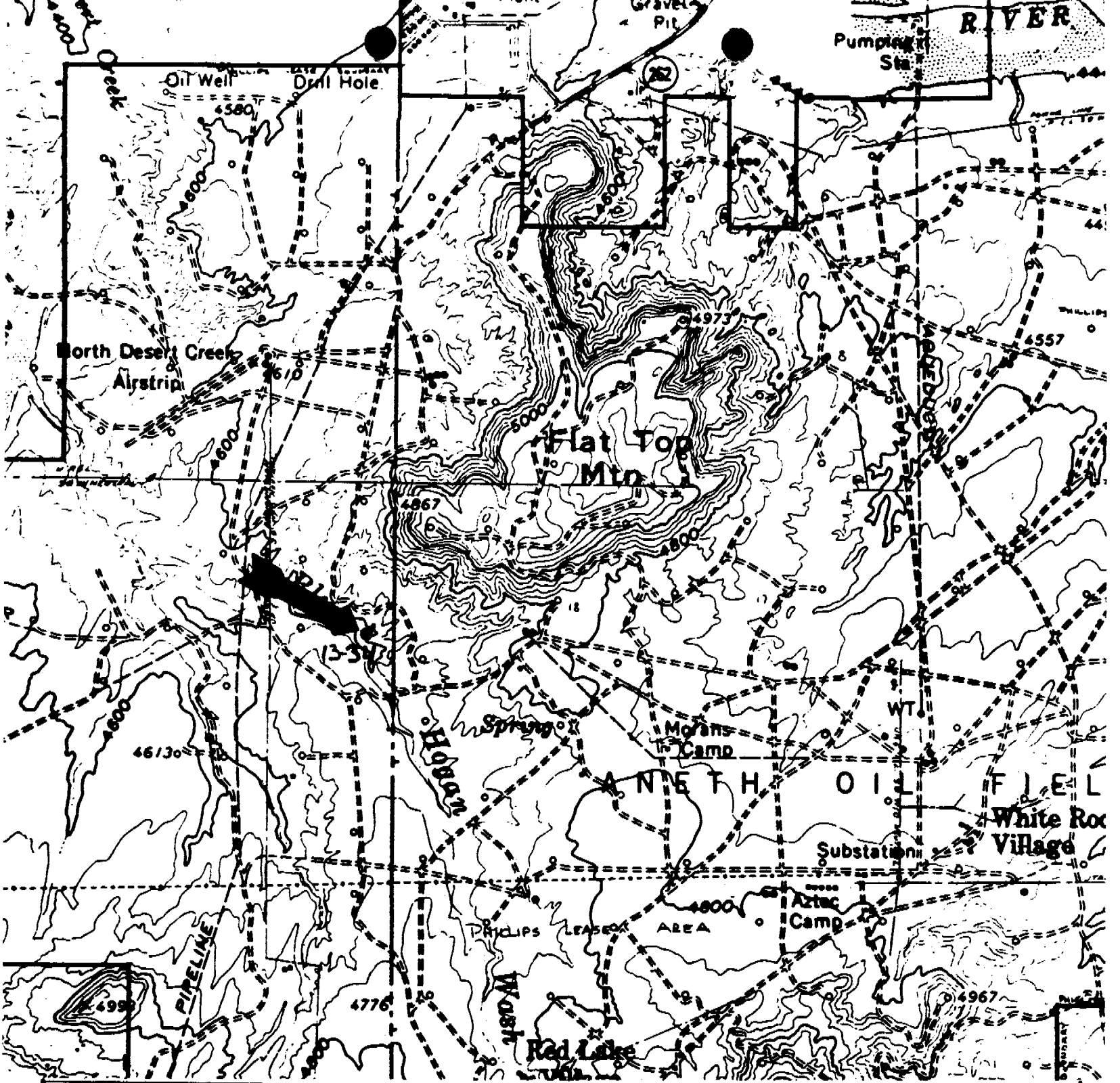
SW SE Sec. 13 - T41S - R23E



1. Reserve Pit
2. Trash Pit
3. Cir. Pits & Pump
4. Rig
5. Cat Walk & Pipe Racks
6. Trailers

Drilling Rig Layout

Outline of Location - Approximately 300' x 350'
Not To Scale



NO.	REVISION	BY	DATE	CHKD	APP'D

FOR BIDS
FOR APPR
FOR CONST

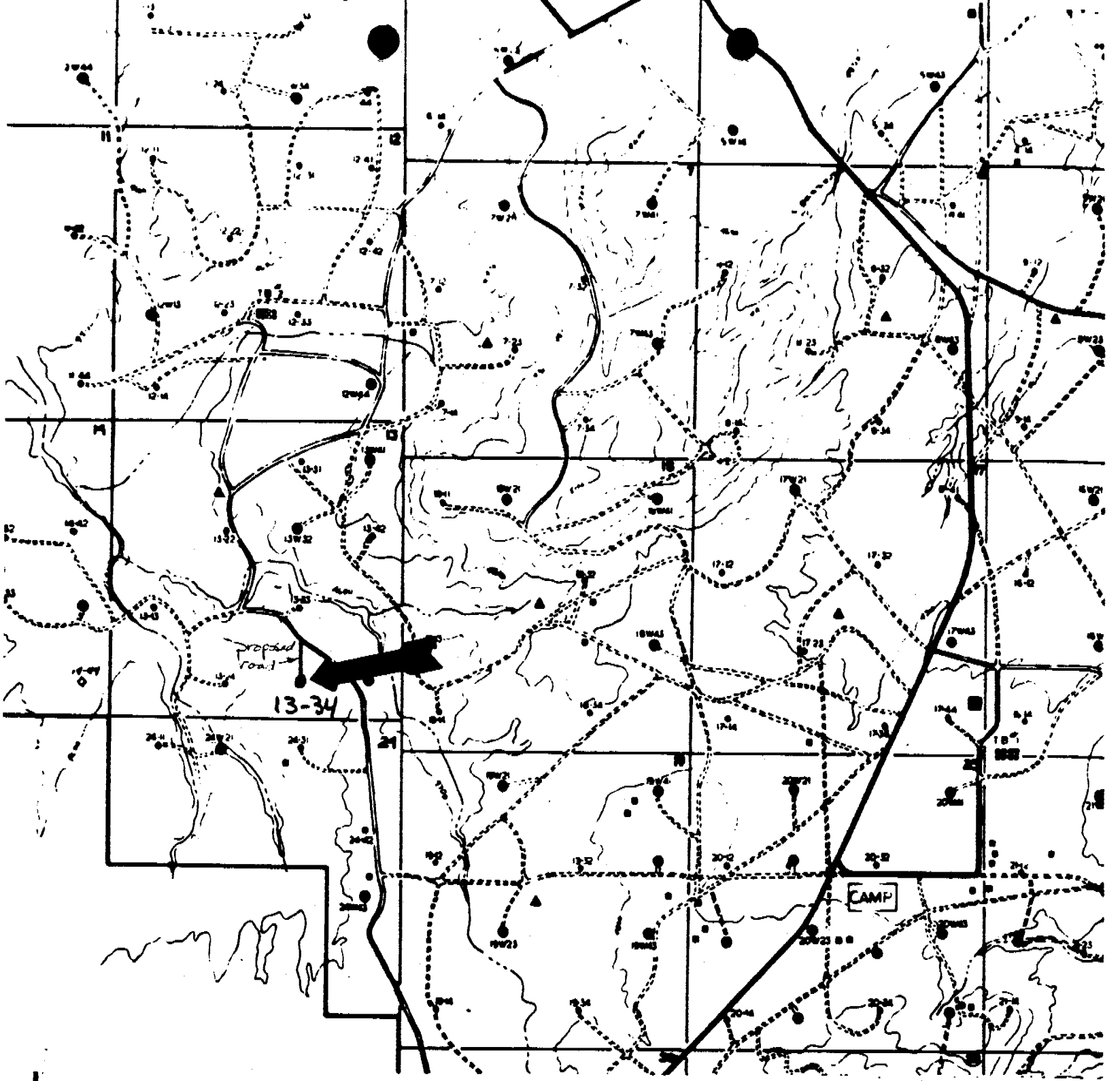
DRAWN 3-30-81 BJM
CHECKED
APP'D

PHILLIPS PETROLEUM COMPANY
BARTLESVILLE, OKLAHOMA

RATHERFORD UNIT WELL 13-34
PROPOSED
SW SE SEC 13 T41S-R23E
SAN JUAN CO., UTAH

JA NO. | FILE CODE
AFE NO. | SCALE 2" = 1 mi.
DWG NO.
SH NO.

FORM 1779-S 8-81



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1		BJM	12/21/04		

FOR BIDS
FOR APPR
FOR CONST

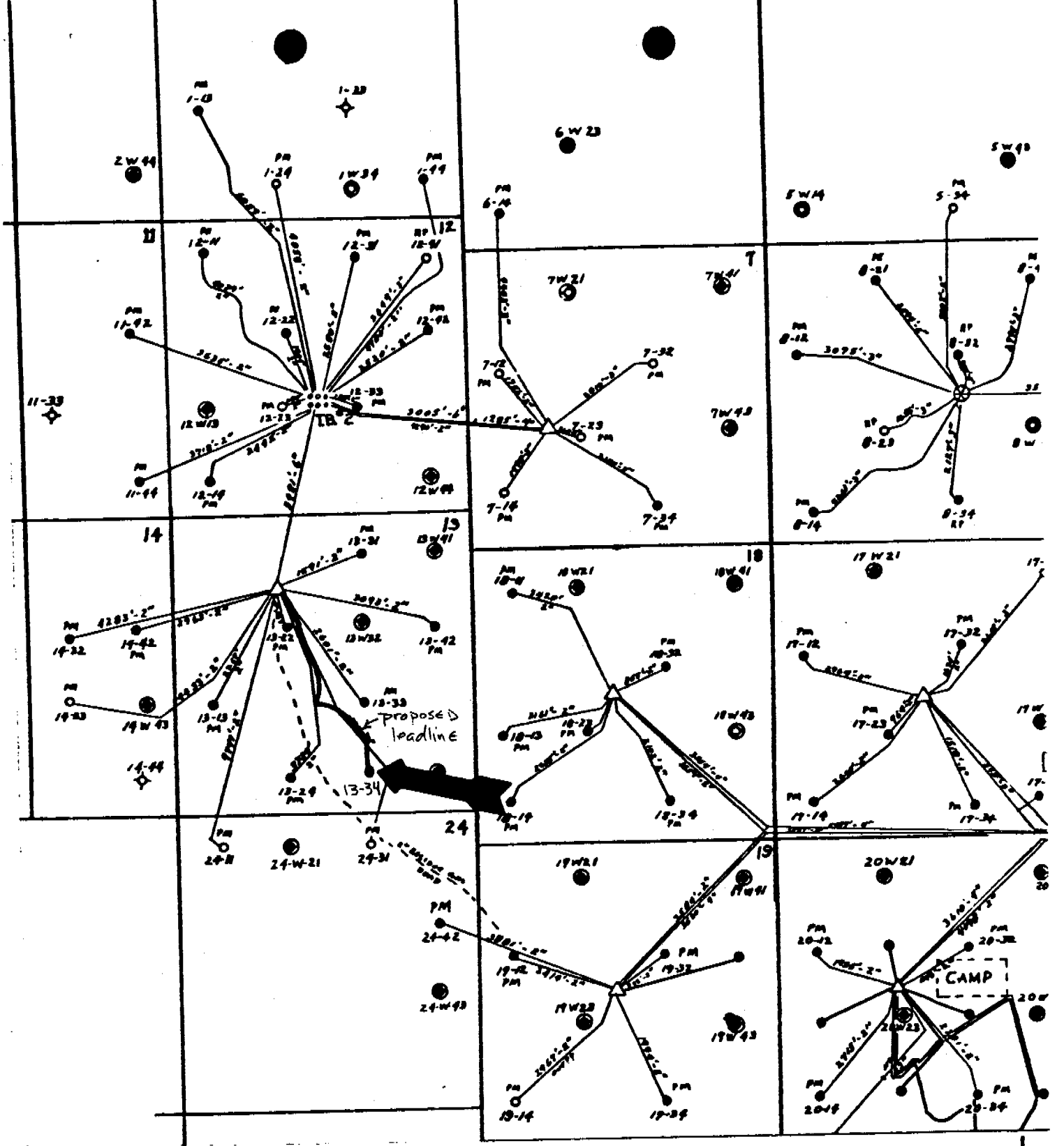
DRAWN 3-30-84 BJM
CHECKED
APP'D

PHILLIPS PETROLEUM COMPANY
BARTLESVILLE, OKLAHOMA

RATHERFORD UNIT WELL 13-34
PROPOSED ROAD PLAT
SW SE SEC 13 T41S-R23E
SAN JUAN CO., UTAH

JA NO. | FILE CODE
AFE NO. | SCALE 2" = 1 mi
DWG NO.
SH NO.

FORM 1779-S 8-81



NO.	REVISION	BY	DATE	CHKD	APP'D

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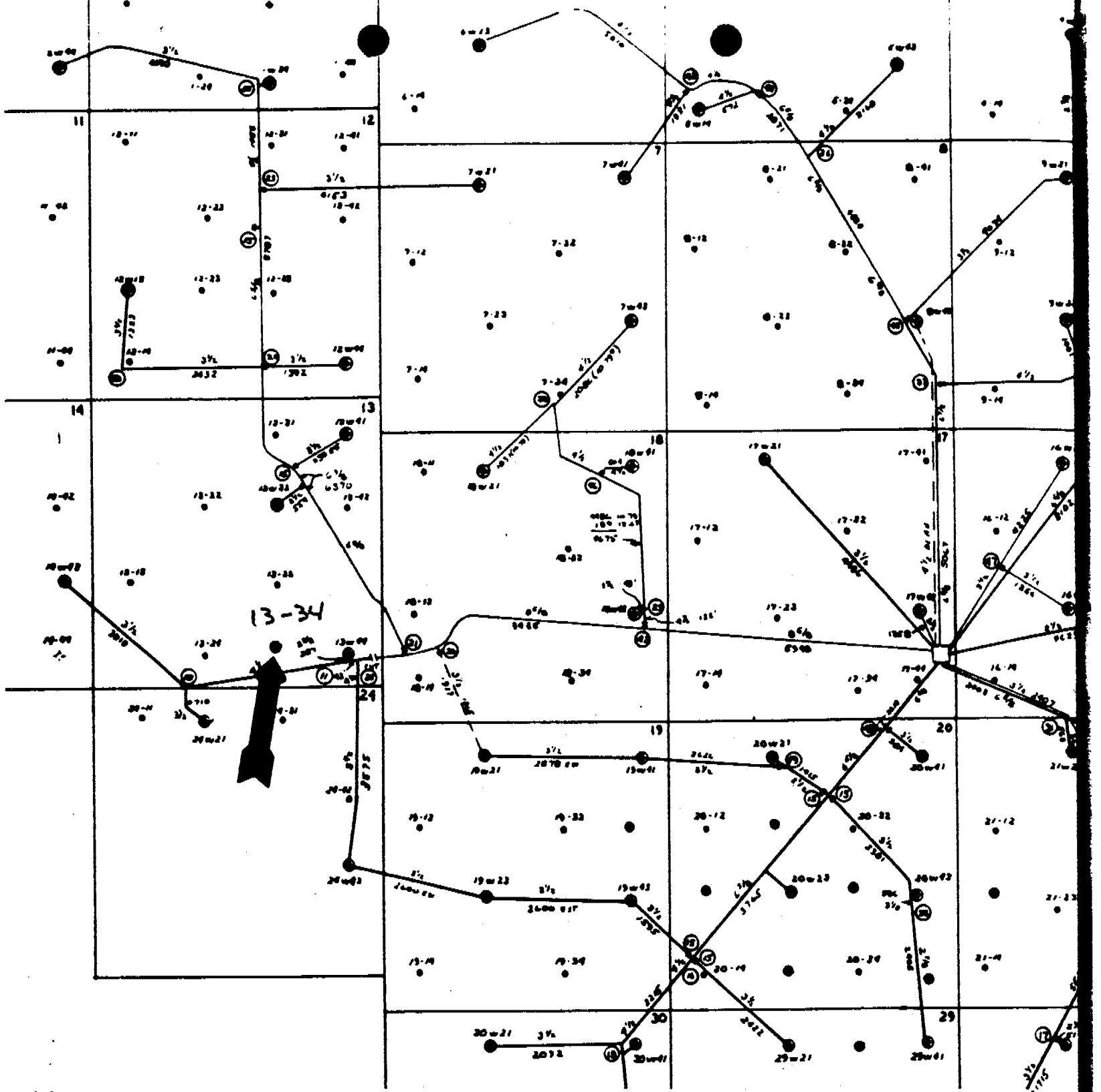
FOR APPR		AFE NO.	SCALE 2.2"=1mi.
FOR CONST	RATHERFORD UNIT WELL 13-34 PROPOSED LEADLINE PLAT SW SE SEC 13 T41S-R23E SAN JUAN CO., UTAH		DWG NO.
DRAWN 3-30-94 BJM			SH NO.
CHECKED			
APP'D			

FORM 1779-S 8-81



NO.	REVISION	BY	DATE	CHKD	APP'D

FOR BIDS	PHILLIPS PETROLEUM COMPANY	JA NO.	FILE CODE
FOR APPR	BARTLESVILLE, OKLAHOMA		
FOR CONST	RATHERFORD UNIT WELL 13-34 WATER INJECTION LINES SW SE SEC. 13 T41S-R23E SAN JUAN CO., UTAH	AFE NO.	SCALE 2.2" = 1mi
DRAWN 12-26-84 BJM		DWG NO	
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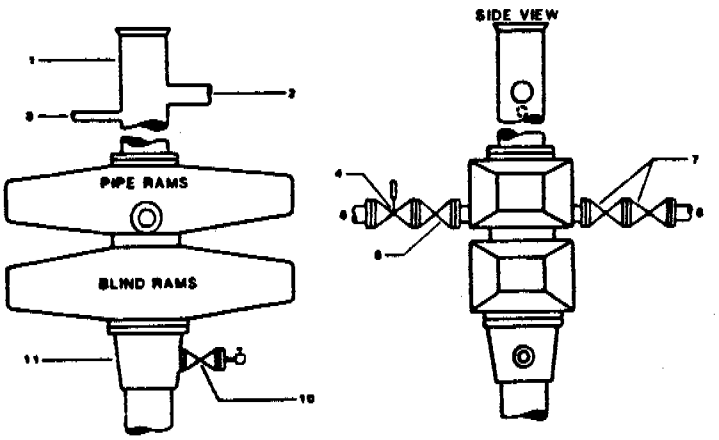
APP'D		SH NO.	

FORM 1779-S 8-81



1. BELL NIPPLE
2. FLOW LINE
3. FILL-UP LINE
4. 2" FE PRESSURE-OPERATED CHOKE LINE VALVE
5. 2" FE GATE VALVE
6. 2" FE CHOKE LINE TO MANIFOLD
7. 2" FE GATE VALVES
8. 2" FE KILL LINE
10. 2" SE OR FE GATE VALVE WITH NEEDLE VALVE
11. CASING HEAD HOUSING

Figure 7-10. Standard Hydraulic Blowout Preventer Assembly (2 M or 3 M Working Pressure) Alternative 3 (without Drilling Spool)

7.6 Testing Surface Blowout Preventer Equipment

7.6.1 Pressure Test Frequency

All rams, annulars, valves, choke and kill lines, choke manifold, kelly cocks, and safety valves shall be pressure tested at the following frequencies:

(1) Initial installation of blowout preventers.

(2) After setting casing, before drilling cement.

(3) Every 7 days or on first trip out of hole after 7 days since previous pressure test.

(4) After any component of the blowout preventer assembly is disturbed, replaced or repaired (this includes lines, valves, or choke manifold). In this case, the component changed may be the only component tested.

(5) Prior to conducting first drill stem test in a series of one or more DST's.

(6) Any time the Phillips Wellsite Supervisor deems necessary, such as prior to drilling into suspected high pressure zones.

7.6.2 Function Test Frequency

All rams, annulars, valves, and other items specified below, shall be function tested at the following frequencies.

(1) On initial installation from driller control and remote panel.

(2) Each trip out of hole alternating between driller's and remote control panel but not more than once every twenty-four (24) hours. Close pipe rams or annular preventer ONLY on drill pipe.

7.6.3 Test Pressures

Use the following table to identify which test is appropriate and at what pressure.

TEST	DESCRIPTION
Low Pressure	Test to 200-300 psi prior to each high pressure test.
Initial Installation	Test all rams, annulars, valves, choke manifold, kelly cocks, and safety valves to the lesser of the following pressures. . Rated working pressure of the component in the blowout preventer assembly with the exception of annular preventer which is to be tested to 70% of the rated working pressure. . The API rated casing burst pressure of the last casing to be utilized in the well with the BOP assembly being tested. . Rated working pressure of the casing head. . If "Cup Tester" is used do not exceed 80% of the API rated burst pressure of the casing.
Repair	Repaired or replaced components are to be tested to the same pressures used in the Initial Test.

7.6.3, cont'd

TEST	DESCRIPTION
Weekly and After Setting Casing	Test all rams, annulars, valves, choke and kill lines, choke manifold, kelly cocks, and safety valves, to the lesser of the following pressures. . 50% of the rated working pressure of the component to be tested. . 80% of the API rating of the casing burst pressure then in the well. . Test blind rams during internal casing pressure test. (Refer to drilling program for test pressures).
DST Operations	Test all pipe rams, annular preventers, valves, choke and kill lines, choke manifold, kelly cocks, and safety valves to the maximum anticipated surface pressure expected while conducting drill stem tests. Do not test annular to more than 70% of its working pressure.
Shallow Casing	Where cased hole is less than 2000 feet measured depth, the test pressure may be 1.5 psi per foot of casing depth, not to exceed 80% of the API rated burst pressure. In the case of shallow conductor casing or drive pipe (500 feet or less) that is equipped with one BOP, then the test pressures do not need to exceed 1.0 psi per foot of casing depth.
Accumulator	Test accumulator to the manufacturer's rated working pressure. Test the accumulator for time to pump up to specifications.

7.6.4 Blowout Preventer Test Practices

(1) All pressure tests shall be witnessed by Phillips' Representative and the Contractor's Senior Supervisor on Location. All tests shall be recorded on the Phillips' Daily Drilling Report, the IADC Report and the BOP Test Form; see Figure 7-13. A reproducible copy of the BOP Test Form (Figure 7-13) can be found in Section III.

7.6.4, cont'd

(2) Hold all low pressure tests for three minutes and high pressure tests for five minutes or until Phillips Representative and the Contractor's Senior Supervisor are satisfied no leaks exist.

(3) A detail procedure for the testing of blowout preventer and choke manifold equipment will be included in the drilling programs. The procedure is to be distributed for each drilling unit under contract by the operating office. Each operating office must include the following practices:

a. Prior to testing, all lines and valves will be thoroughly flushed to ensure the system is clear. Test all opening and closing control lines to 1500 psi and inspect for leaks.

b. If necessary, run a stand of drill collars below the test plug to prevent unseating the test tool during testing.

c. All precautions must be taken to avoid pressuring the casing below the test tool.

d. The running string is to be full of water (or antifreeze solution) for immediate indication of test tool leakage.

e. All pipe rams, blind/shear rams, blind rams, annular preventers, valves, fail-safe valves, choke and kill lines are to be tested at the frequencies and pressures outlined in this section.

f. Drill pipe safety valve, lower and upper kelly cocks are to be tested from below at pressures and frequencies outlined in this section.

g. All test fluids are to be bled back to the pump unit in safe manner.

7.6.5 Testing Wellhead Pack-offs

The wellhead pack-off is to be pressure tested upon installation for five minutes. Test pressure is to be 80% API rated casing collapse or the rated working pressure of the casing head whichever is the lesser. Casing annulus valve(s) must be in open position to prevent casing collapse during pack-off testing.

When testing the wellhead pack-off, use recorded test pressures and volumes to determine if pack-off is leaking. Pressure should be immediately released at the first indication of a leak.

7.6.6 Safety Precautions

One pumping unit operator is to be stationed at the high pressure pumping unit, and is to remain at this station until all testing has been completed. The pump unit operator is to be in continuous communication with the person who is recording the test data. The Phillips Wellsite Supervisor and Contractor's Senior Supervisor on location will be the only personnel who will go into the test area to inspect for leaks when the equipment involved is under pressure. The rig crews are to stay clear of the area until such time that both the Phillips Wellsite Supervisor and the Contractor's Senior Supervisor have contacted the pumping unit operator and all three have agreed that all pressure has been released, and there is no possibility of pressure being trapped. The rig crews may then go into the area to repair leaks or work as directed.

All lines, swings, and connections that are used in the testing of the blowout preventers are to be adequately secured in place.

Pressure is to be released only through the pressure release lines that are vented back into the pump unit tanks. The lines are to be clamped down to direct the flow into unit tanks.

ARCHAEOLOGICAL SURVEYS OF 13 PROPOSED WELL LOCATIONS, THEIR ASSOCIATED ACCESS ROADS AND FLOW LINE ROUTES, AND 9 MILES OF PROPOSED WATER INJECTION LINE ROUTES IN SAN JUAN COUNTY, SOUTHEASTERN UTAH

12-W24	13-12	13-43
12-34	13-14	18-W12
14-41	13-21	24-41
13-11	13-23	29-22
	13-34	

Water Injection Lines: Mainline and Lines A, B, C, D, E, F, F-1, G, H, I, and J

Prepared by:

Debra Foldi
Archaeological Consultant

Prepared for:

Phillips Oil Company
Cortez, Colorado

Submitted by:

William E. Davis, Director
Abajo Archaeology
Bluff, Utah

August 1984

Navajo Nation Antiquities Permit No. 1984-24
United States Department of the Interior
Bureau of Indian Affairs
Branch of Environmental Quality Control Authorization
BIA-NAO-84-ABA-048-1
and
Utah State Permit No. U-84-8-5-i

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ABSTRACT

Cultural resource surveys were conducted as part of the Rutherford Unit expansion project for Phillips Oil Company, in southeastern San Juan County, Utah. The surveys were performed on August 4, 6, 7, 9, and 11, 1984 on 13 proposed well location sites, eight associated access roads, portions of six associated flow line routes, and along nine miles of proposed injection line. The project area occurs in Sections 11, 12, 13, 14, and 24 in T 41 S, R 23 E and Sections 7, 17, and 18 in T 41 S, R 24 E, USGS White Mesa Village Quadrangle, Utah, 15'. It is under jurisdiction of the Bureau of Indian Affairs.

Seventeen isolated finds and one Anasazi Basketmeker II to Pueblo I artifact scatter (SJC-1106) were located during the survey. The isolated finds are not considered significant in terms of the eligibility criteria set forth in the National Register of Historic Places, thus, archaeological clearance is recommended for the project area, except the 100 meters of mainline injection pipeline east of its juncture with line J. It is recommended that the pipeline be rerouted or that an archaeologist be present to monitor construction of that portion of pipeline.

INTRODUCTION

On August 4, 6, 7, 9, and 11, 1984, cultural resource surveys were conducted within the Rutherford Unit south of Montezuma Creek, southeast San Juan County, Utah (Figure 1). The surveys were requested by Mr. Max Issacs, supervisor of Phillips Oil Company of Cortez, Colorado, and carried out at the request of Mr. Bob Hogg, engineer, and Mr. John ~~White~~ WEICHGROOT, who replaced Mr. Max Issacs. Both Mr. Hogg and Mr. ~~White~~ WEICHGROOT were present in the field during portions of the survey. Mr. Hogg assisted the archaeologist by flagging the access routes and flow lines during the survey. The project consisted of 13 proposed well locations, their associated access routes and flow lines, and approximately nine miles of proposed injection pipeline.

The project area lies within the boundaries of the Navajo Reservation (Tables 1 and 2) which is under the jurisdiction of the United States Department of the Interior, Bureau of Indian Affairs and the Navajo Nation. Cultural resources are administered by the USDI-BIA, Branch of Environmental Quality and by the Navajo Nation Cultural Resource Management Program.

The purpose of the survey was to verify the presence of and document any cultural resources within the proposed project impact areas. The accomplishment of these objectives fulfills compliance requirements for the preservation of archaeological and historical resources set forth by the American Antiquities Act of 1906, the Historic Preservation Act of 1966, the National Environmental Policy Act of 1969, Executive Order No. 11593 of 1971, the Archaeological and Historical Conservation Act of 1974, and the Archaeological Resources Protection Act of 1979. Cultural resources occurring on Navajo Tribal lands are further protected by Tribal laws: CJA-16-72 of 1972, Res. ACAP-86-77 of 1977, and the Navajo Tribal Code, Title Nineteen, Sections 1002 and 1004.

Field work was conducted under the Navajo Nation Antiquities Permit No 1984-24, the USDI-BIA, Environmental Quality Authorizaion No. BIA-NAO-84-048-1, and State of Utah Permit No. U-84-8-5-i. These permits and authorizations were granted to Abajo Archaeology of Bluff, Utah. BIA-NAO-84-ABA-048-1 is a "non-collection, non-disturbance" use authorization to conduct archaeological surveys on Navajo Tribal lands. The surveys were performed by Debra Foldi, an archaeological consultant with Abajo Archaeology. Dr. Anthony Klesert, Director of the Navajo Nation Cultural Resource Management Program and Mr. Terry

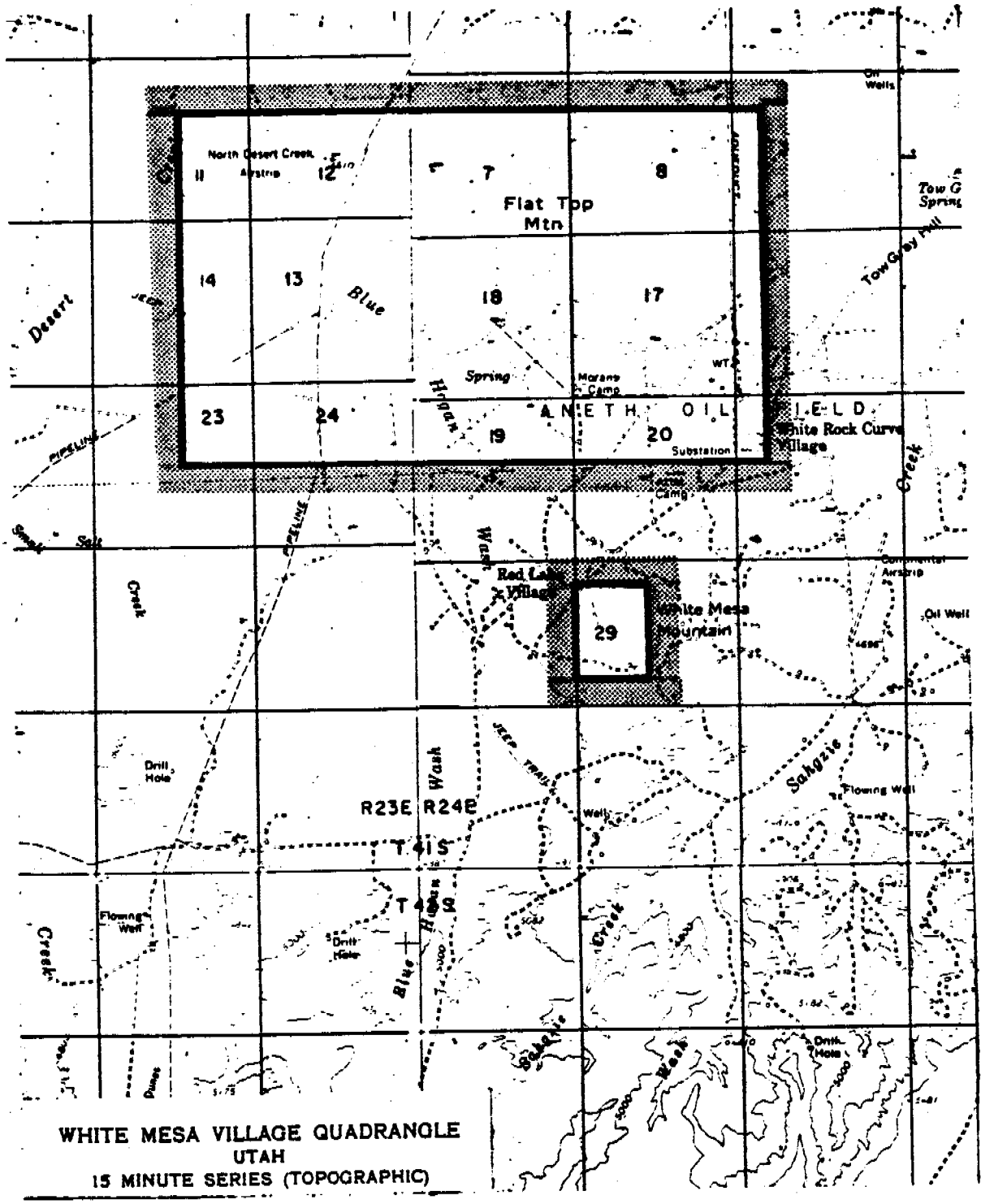

Figure 1. Location of Phillips Oil Company Rutherford Unit - 1984 expansion project. Stippling outlines project area.

Map Scale: 1:62,5000

TABLE 1

Legal Description of Project Area

Jurisdiction: Navajo Nation
Map: White Mesa Village Quadrangle, Utah, 1962, 15'

Well Pad	Legal Location	UTM (Zone 12)	Access Route, Length
12-W24	CTSESW, Sec.12 T 41 S, R 23 E	647,000 m E 4,121,825 m N	300 feet (runs west from location)
12-34	SESWSE, Sec.12 T 41 S, R 23 E	647,700 m E 4,121,800 m N	600 feet (runs SSW from location)
14-41	NENENE, Sec.14 T 41 S, R 23 E	646,250 m E 4,121,950 m N	1000 feet (runs west from location)-flow line follows access
13-11	CTNWNW, Sec.13 T 41 S, R 23 E	646,600 m E 4,121,950 m N	800 feet (runs north from location)-flow line follows access
13-12	NWSWNW, Sec.13 T 41 S, R 23 E	646,600 m E 4,121,075 m N	1300 feet (runs west from location)-flow line follows access
13-14	CTSWSW, Sec.13 T 41 S, R 23 E	646,600 m E 4,120,175 m N	800 feet (runs WSW from location)
13-21	CTNENW, Sec.13 T 41 S, R 23 E	647,000 m E 4,121,400 m N	No access surveyed No flow line surveyed
13-23	CTNWSW, Sec.13 T 41 S, R 23 E	647,000 m E 4,120,600 m N	No access surveyed No flow line surveyed
13-34	CTSWSE, Sec.13 T 41 S, R 23 E	647,700 m E 4,120,200 m N	600 feet (runs south from location)-flow line follows access
13-43	SWNESE, Sec.13 T 41 S, R 23 E	647,750 m E 4,120,500 m N	600 feet (runs NNE from location)-flow line follows access
18-W12	CTSWNW, Sec.18 T 41 S, R 24 E	648,225 m E 4,120,300 m N	500 feet (runs ENE from location)-flow line follows access
24-41	CTNENE, Sec.24 T 41 S, R 23 E	647,825 m E 4,119,800 m N	No access surveyed No flow line surveyed
29-22	SWSENW, Sec.29 T 41 S, R 24 E	650,080 m E 4,117,600 m N	900 feet (runs east from location)-flow line follows access

TABLE 2

Legal Descriptions of Water Injection Lines

Jurisdiction: Navajo Nation
Map: USGS White Mesa Village Quadrangle, Utah, 1962, 15'

Line	Legal Location	Length (Ft.)
Main	SE & SW of SE, SE & SW of SW, Sec.17, T41S, R24E SE & SW of SE, SE & SW of SW, Sec.18, T41S, R24E SE & NW of SE, SE & NW of NW, Sec.13, T41S, R23E SE of SE, Sec.11, T41S, R23E	18,500
A	SE & NE of SE, Sec.17, T41S, R24E	1,250
B	Eastern portion of: SE & NE of SE and SE & NE of NE and NENW of NE, Sec.18, T41S, R24E	6,900
C	SE & NE of SW, Sec.18, T41S, R24E	1,400
D	SW & NW of SW, SW of NW, Sec.18, T41S, R24E SE of NE, Sec.13, T41S, R23E	3,250
E	SE of NW, NW & NE of NE, Sec.13, T41S, R23E SE of SE, Sec.12, T41S, R23E SW of SW, Sec. 7, T41S, R24E	5,500
F	NW of NW, Sec.13, T41S, R23E SE of SW and NW of SE, Sec.12, T41S, R23E	3,850
F-1	SE of SW and SW of SW and NW of SW, Sec.12, T41S, R23E	1,500
G	NW of NW, Sec.13, T41S, R23E/SE of NE, Sec.14, T41S, R23E	1,700
H	SE of NW and NW of SW, Sec.13, T41S, R23E	1,500
I	NE of SE and SE of SW, Sec.13, T41S, R23E	1,700
J	SW of SW, Sec.18, T41S, R24E	300

Del Benee of the USDI-BIA Branch of Environmental Quality were notified prior to performance of the field surveys.

DESCRIPTION OF THE PROJECT AREA

The Phillips Oil Company, Rutherford Unit development project is located in the extreme southeastern portion of San Juan County, just south of Montezuma Creek, Utah. The San Juan River flows to the north (2.5 miles), White Mesa Mountain is to the south, and Flat Top Mountain is situated within the project area. The Rutherford Unit project is within the Blanding Basin of the Colorado Plateau Physiographic Province (Stokes 1977) and is characterized by broken topography ranging in elevation from 4580 feet to 6000 feet above sea level. Most of the project area is flat to rolling terrain, broken by steep-sided mesas, and dissected by intermittent washes and arroyos which feed the San Juan River. The San Juan River is the nearest permanent water source.

The surface geology is reflected in the general broken nature of the landscape. The lower flatlands are fluvial sandstones and mudstones of the Recapture Creek member of the Morrison Formation, which is generally covered by wind blown silts and sands with patches of soil and alluvium (Hintze and Stokes 1964). The lower, light-colored Bluff Sandstone Formation is exposed along Desert Creek (at the east edge of the project area) and portions of Blue Hogan Wash (Hintze and Stokes 1964). The mesas are comprised of the Westwater Canyon and Brushy Basin Members of the Morrison Formation; the later is a dinosaur-bearing, fluvial and lacustrine mudstone and siltstone (Hintze and Stokes 1964) which often contains chert deposits. The coal-bearing sandstone and carbonaceous shales of the Dakota Sandstone cap the higher mesa tops.

The vegetation is in the cool desert climates classified as the Upper Sonoran Life Zone and is characterized by a shadscale (salt desert shrub) plant community. The vegetation noted during the survey included snakeweed, rabbitbrush, shadscale, Mormon tea, big sagebrush, greasewood, saltbush, narrow-leaf yucca, prickly pear cactus, galleta grass, Indian rice grass, cheat grass, locoweed, and Russian thistle. Today, the project area supports a fairly large population of domesticated grazers: sheep, horses, and cattle. Non-domesticates noted during the survey were rabbits, rodents, lizards, and unidentified birds.

CULTURE HISTORY

Broad overviews have been written, synthesizing the known culture history of southeastern Utah (see Nickens 1982, Weber 1982) and of northwestern New Mexico (see Stuart and Gauthier 1981). In general, the San Juan Basin, as was much of the Colorado Plateau, was inhabited prehistorically by the Basketmakers and Anasazi, relatively sedentary people who first incorporated horticulture into a hunting and gathering subsistence strategy, and later practiced agriculture. The Archaic hunter-gatherers and the earlier Paleo-Indian, mega-fauna hunters preceded the Basketmakers and Anasazi.

Historically the San Juan Basin, as was much of the Intermountain West, was inhabited by the Navajo and Ute. Although their entry into this area is as little understood as their early history, it is believed that their arrival barely preceded the Spanish Entrada during the 16th century (Wilcox 1981). From that time on, the area was visited by the Spanish, Anglo explorers, trappers, and traders, and later in the 19th century, by the Mormon settlers. Presently, much of the San Juan Basin, primarily the southern portion, is inhabited by the Navajo.

Archaeological surveys related to energy development to the east and northeast of the Rutherford Unit project (see Hewett et al 1979, Moore 1983, 1984, Swift 1984a, 1984b) have documented a variety of sites from artifact scatters to multiroom structures. Documented sites range from the Anasazi Pueblo I phase through recent Navajo. The highest site density occurs during the Anasazi Pueblo II phase, AD 900-1100. In the immediate project area, numerous isolated finds and Basketmaker II through Pueblo III and recent Navajo sites have been recorded (see Langenfeld and Hooten 1984, Langenfeld 1984).

METHODOLOGY

A total of 13 proposed well location sites and eight access routes were inventoried, along with portions of six flow line routes (above ground pipes). A total of 9.13 miles (48,200 feet) of proposed water injection line (buried pipeline) were also inventoried (Figures 2 and 3). Tables 3 and 4 describe the area surveyed. Each of the well location sites were staked prior to the survey, demarcating the 300 by 350 foot pad site. Each well location was inspected by walking parallel transects spaced 10 meters apart back and forth until the entire location was surveyed. An additional 100 foot (30 meter) buffer zone was also inspected around the staked well pad site.

The access roads and flow line routes were flagged while the archaeologist surveyed the well sites. No access routes were surveyed for well locations that were situated on or at the edge of existing maintained roads. Flow lines are to follow proposed and existing roads and existing flow line routes. Only the portions of proposed flow line routes that paralleled proposed access roads which have yet to be built were surveyed. A 100 foot right-of-way was surveyed by walking a zig-zag pattern along each flagged access route. If a flow line was to follow the access route, an additional 25 feet were inspected in the same manner.

The injection line routes were marked by lath stakes. A 50 foot right-of-way was inspected along the staked route, using the stakes as a center line. This was accomplished by walking a zig-zag pattern down one side of the line and back along the other.

All cultural materials encountered during the survey were noted, described, and often illustrated. Those cultural resources which lacked spacial integrity and the potential for interpretable past human behavior (Plog et al 1978) were noted as isolated finds.

In addition to the field inspection, a search of the site files at the Navajo Nation Cultural Resource Management Program in Window Rock, Arizona, was initiated by phone, August 13, 1984. A records search by the Utah Division of State History found no sites to have been previously recorded within the proposed project impact areas.

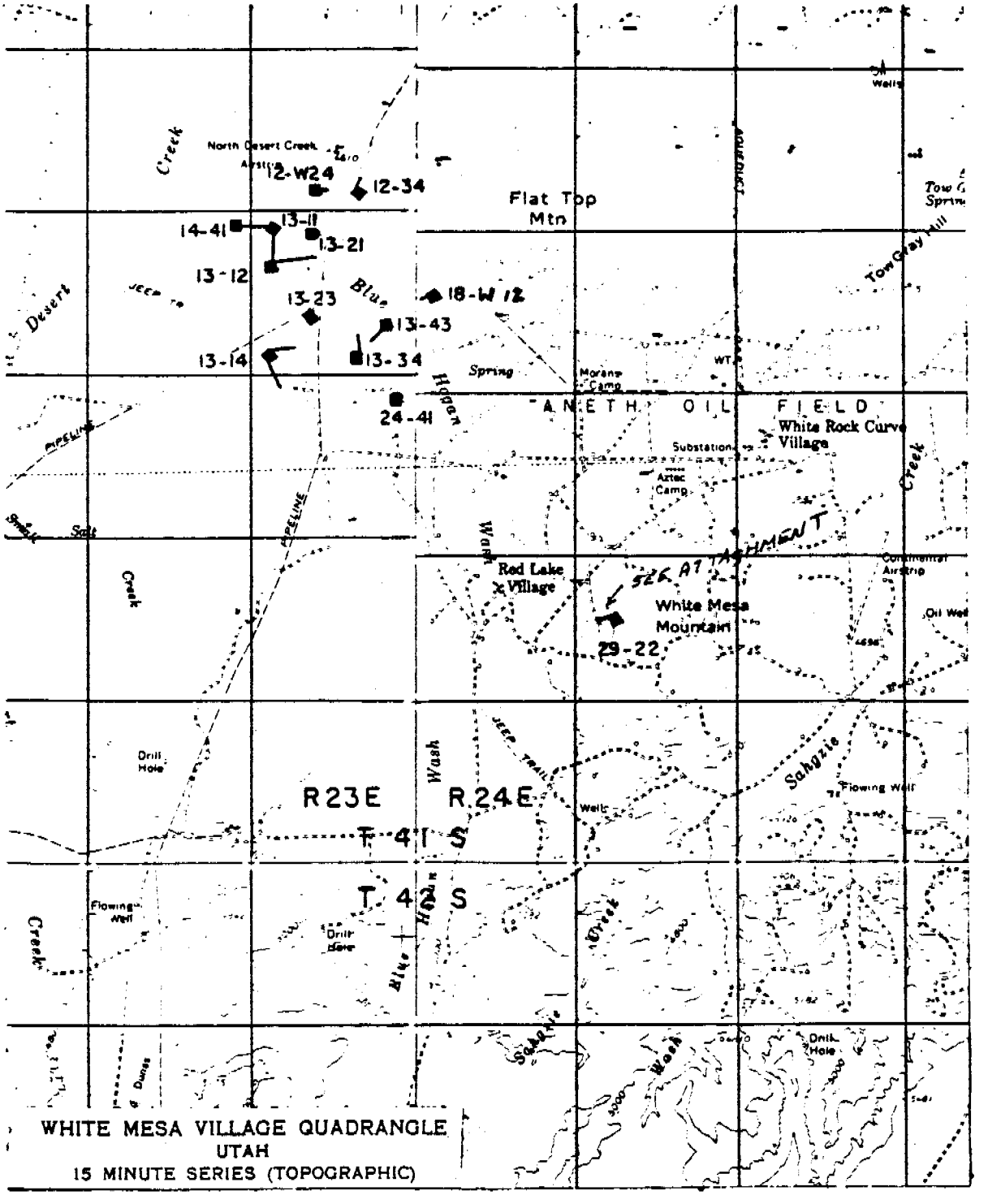

Figure 2. Locations of proposed well locations, access roads and flow line routes.

Map Scale: 1:62,500

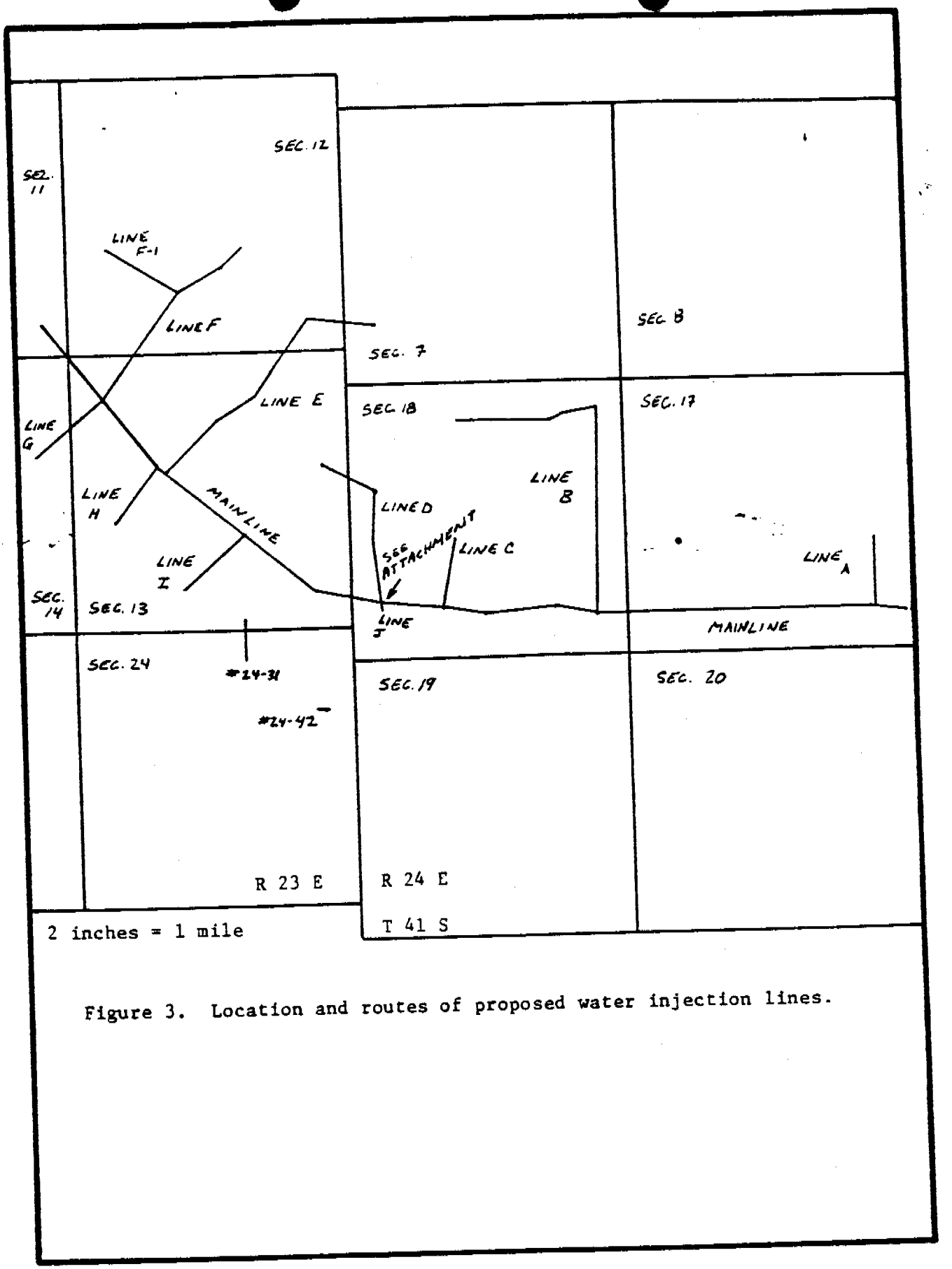

Figure 3. Location and routes of proposed water injection lines.

TABLE 3

Description of Well Pad Project Area and Area Surveyed

Well Pad	Project Area (square feet)	Area Surveyed (square feet)
12-W24	300 ft X 350 ft = 105,000 (2.41 acres) Access route = 300 ft	400 ft X 450 ft = 180,000 (4.13 acres) 300 ft X 100 ft = 30,000 (0.69 acres)
12-34	300 ft X 350 ft = 105,000 (2.41 acres) Access & flow line = 600 ft	400 ft X 450 ft = 180,000 (4.13 acres) 600 ft X 125 ft = 75,000 (1.72 acres)
14-41	300 ft X 350 ft - 105,000 (2.41 acres) Access & flow line = 1,000 ft	400 ft X 450 ft = 180,000 (4.13 acres) 1,000 ft X 125 ft = 125,000) (2.87 acres)
13-11	300 ft X 350 ft = 105,000 (2.41 acres) Access & flow line = 800 ft	400 ft X 450 ft = 180,000 (4.13 acres) 800 ft X 125 ft = 100,000 (2.30 acres)
13-12	300 ft X 350 ft = 105,000 (2.41 acres) Access & flow line = 1,300 ft	400 ft X 450 ft = 180,000 (4.13 acres) 1,300 ft X 125 ft = 162,500 (3.73 acres)
13-14	300 ft X 350 ft = 105,000 (2.41 acres) Access route = 800 ft Flow line = 700 ft	400 ft X 450 ft = 180,000 (4.13 acres) 800 ft X 125 ft = 100,000 (2.30 acres) 700 ft X 100 ft = 70,000 (1.61 acres)
13-21	300 ft X 350 ft = 105,000 (2.41 acres) No access or flow line surveyed	400 ft X 450 ft = 180,000 (4.13 acres)
13-23	300 ft X 350 ft = 105,000 (2.41 acres) No access or flow line surveyed	400 ft X 450 = 180,000 (4.13 acres)
13-34	300 ft X 350 ft = 105,000 (2.41 acres) Access and flow line = 600 ft	400 ft X 450 ft = 180,000 (4.13 acres) 600 ft X 125 ft = 75,000 (1.72 acres)

TABLE 3, continued

Well Pad	Project Area (square feet)	Area Surveyed (square feet)
13-43	300 ft X 350 ft = 105,000 (2.41 acres)	400 ft X 450 ft = 180,000 (4.13 acres)
	Access & flow line = 600 ft	600 ft X 125 ft = 75,000 (1.72 acres)
18-W12	300 ft X 350 ft = 105,000 (2.41 acres)	400 ft X 450 ft = 180,000 (4.13 acres)
	Access & flow line = 500 ft	500 ft X 125 ft = 62,500 (1.43 acres)
24-41	300 ft X 350 ft = 105,000 (2.41 acres)	400 ft X 450 ft = 180,000 (4.13 acres)
	No access or flow line surveyed	
29-22	300 ft X 350 ft = 105,000 (2.41 acres)	400 ft X 450 ft = 180,000 (4.13 acres)
	Access & flow line = 900 ft	900 ft X 125 ft = 112,500 (2.58 acres)

Note: The figures for access route and flow line lengths are only for the portions that cross undisturbed areas. Portions that follow maintained roads or existing flow line routes were not surveyed and those figures are not provided here.

TABLE 4

Description of Water Injection Pipeline Project Length and Area Surveyed

Line	Project Length	Area Surveyed (square feet)
Main	18,500 feet	18,500 ft X 50 ft = 925,000 (21.23 acres)
A	1,250 feet	1,250 ft X 50 ft = 62,500 (1.43 acres)
B	6,900 feet	6,900 ft X 50 ft = 345,000 (7.92 acres)
C	1,400 feet	1,400 ft X 50 ft = 70,000 (1.61 acres)
D	3,250 feet	3,250 ft X 50 ft = 162,500 (3.73 acres)
E	5,500 feet	5,500 ft X 50 ft = 275,000 (6.31 acres)
F	3,850 feet	3,850 ft X 50 ft = 192,500 (4.42 acres)
F-1	1,500 feet	1,500 ft X 50 ft = 75,000 (1.72 acres)
G	1,700 feet	1,700 ft X 50 ft = 85,000 (1.95 acres)
H	1,500 feet	1,500 ft X 50 ft = 75,000 (1.72 acres)
I	1,700 feet	1,700 ft X 50 ft = 85,000 (1.95 acres)
J	300 feet	300 ft X 50 ft = 15,000 (0.34 acres)
Line runs north from 24-31	750 feet	750 ft X 50 ft = 37,500 (0.86 acres)
Line runs east from 24-42	100 feet	Not surveyed, entirely within existing well pad location

RESULTS

One archaeological site and 17 isolated finds were encountered during the survey. The archaeological site, a Basketmaker II to Pueblo I lithic scatter (SJC-1106) had been previously recorded by San Juan College Cultural Resources Management Program (see appendix for site description). The site had been located during the survey of a proposed access route to Phillips Oil Company's proposed well location # 18-24, and relocated during the survey of the Phillips Oil Company proposed injection line pipeline. The site was encountered at the junction of the mainline and line J (Figure 4).

SEE ATTACHMENT

The injection line crosses through the extreme southwest portion of the site, where it has been disturbed by previous pipeline and road construction. Four pieces of lithic debitage were encountered in the pipeline right-of-way outside of the disturbed area. These artifacts appear to be surficial. Resurvey of the site area found artifact concentrations to occur in the existing roadway and bladed pipeline valve area. Approximately 20 pieces of lithic debitage, one biface, one uniface (chopper), and two unidentified Mesa Verde white ware sherds (7 mm thick with sand temper) were noted during the resurvey. Note: the projectile point fragments were not relocated. The integrity of these deposits has been greatly disturbed by blading activities. Despite the disturbed nature of the site, the potential for buried deposits remains. Also, there is good probability that the site is multicomponent due to the presence of the Archaic diagnostic and the relatively late Puebloan white ware ceramics.

Two alternatives are proposed for this 100 meter section of the pipeline: (1) to build the injection line where proposed with an archaeologist monitoring the construction activities, or (2) to reroute the mainline in order to avoid the site area. This alternative would require an archaeologist to survey the new route.

The remaining cultural materials were isolated finds. A total of 17 isolated finds were encountered during the survey. All are surficial occurrences and are described in Table 5.

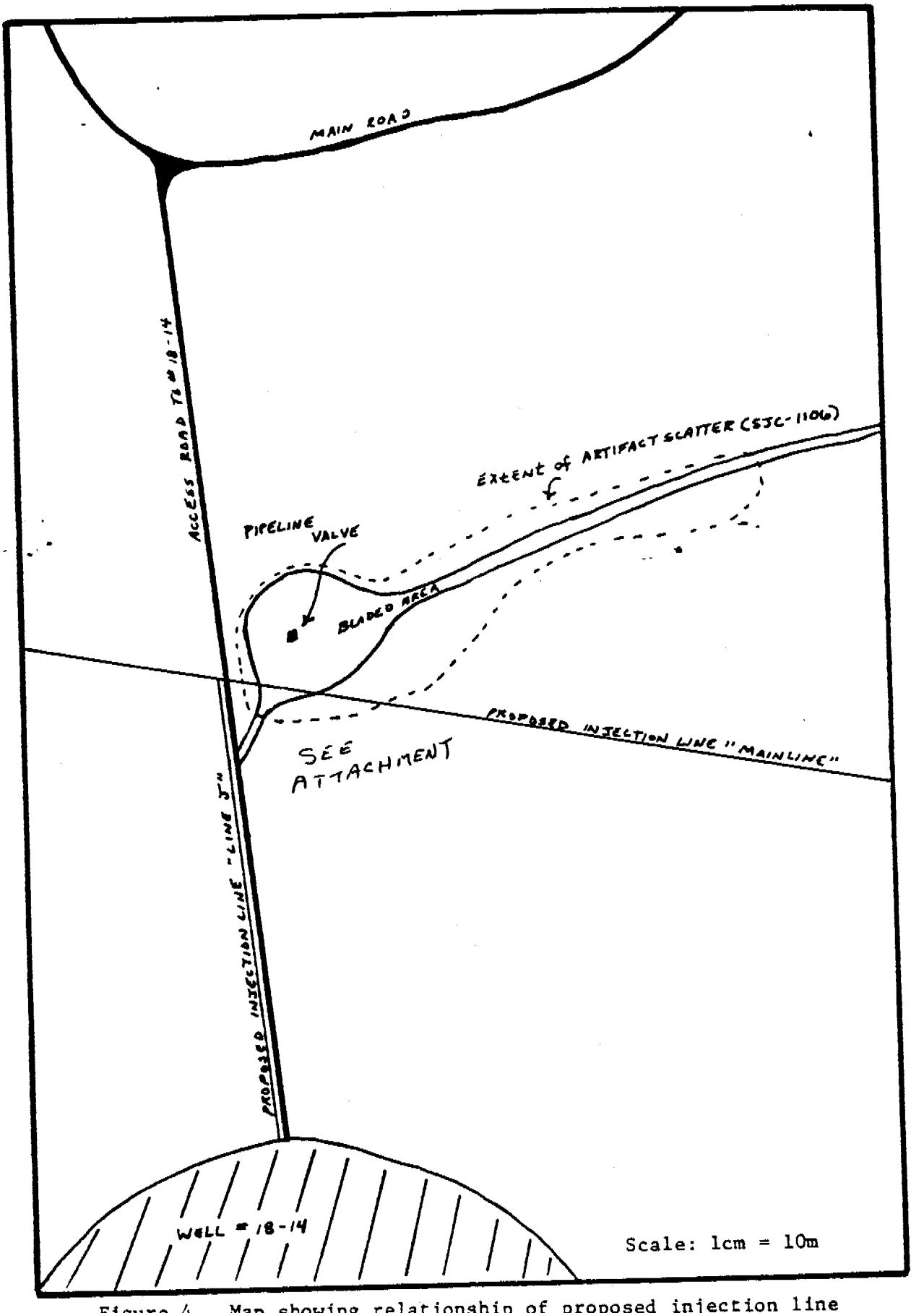

Figure 4. Map showing relationship of proposed injection line route and archaeological site - SJC-1106. Site Location: Center of E 1/2, W 1/2, SW 1/2 of Section 18, T 41 S - R 24 E, San Juan County, Utah.

TABLE 5

Isolated Finds from Phillips Oil Rutherford Unit Project
Legal Locations and Descriptions

Number	Legal Location	Description
RU # A	CTSESW Sec.12 T41S R23E UTM: 647,000 m E 4,121,825 m N	On location 12-W24. Isolated features: semi-circular, slab feature and two slab piles; a broken cup saucer found inside--white ovenware, modern; unidentified pipe fragments, wire and sole of shoe.
RU # B	CTNENW Sec.13 T41S R23E UTM: 647,000 m E 4,121,400 m N	13-21. 3 gray-green chert, interior core reduction flakes.
RU # C	CTNWNW Sec.13 T41S R23E UTM: 646,600 m E 4,121,950 m N	13-11. Gray and red quartzite cobble tool; 3 flakes removed.
RU # D	CTNWSW Sec.13 T41S R23E UTM: 647,000 m E 4,120,600 m N	*13-23. Biface with crude, heavily weathered flake scars, material type is light and dark gray mottled chert with tan cortex.
RU # E	NWSWSE Sec.13 T41S R23E UTM: 647,690 m E 4,120,400 m N	Access road to 13-34. 4 unidentified corrugated sherds; 4 recent Pepsi bottles.
RU # F	CTSWSE Sec.13 T41S R23E UTM: 647,700 m E 4,120,200 m N	*13-43. 1 crude olive-green oolitic chert biface.
RU # G	NENENE Sec.14 T41S R23E UTM: 646,250 m E 4,121,950 m N	1 Mesa Verde white ware sherd.
RU # H	NENWNW Sec.13 T41S R23E UTM: 646,775 m E 4,121,550 m N	*Injection line 12-24 to 13-11. 1 grainy, tan to yellow chert uniface with heavily weathered, yellowish patina; flake scars are smooth.
RU # I	NWNWNE Sec.18 T41S R24E UTM: 648,950 m E 4,121,325 m N	18-21 to 18-41. 3 green quartzite interior core reduction flakes.

TABLE 5, continued

Number	Legal Location	Description
RU # J	NWSESE Sec.18 T41S R24E UTM: 649,300 m E 4,120,150 m N	18-44 to 18-34. 1 gray-tan quartzite, utilized, secondary reduction flake; 1 green quartzite secondary reduction flake.
RU # K	NESWSW Sec.18 T41S R24E UTM: 648,450 m E 4,120,175 m N	18-34 to 18-14. 1 white quartzite, tertiary reduction flake; 1 green-gray quartzite, tertiary reduction flake.
RU # L	NWSWSE Sec.17 T41S R24E UTM: 650,400 m E 4,120,100 m N	17-14 to 17-44. 2 white chert, interior core reduction flakes.
RU # M	SWNWSW Sec.18 T41S R24E UTM: 648,200 m E 4,120,350 m N	18-13 to 18-14. 4 gray quartzite, secondary reduction flakes.
RU # N	NWSESE Sec.13 T41S R23E UTM: 647,700 m E 4,120,350 m N	13-33 to 13-44. 3 gray-green quartzite, interior core reduction flakes; 1 secondary reduction flake.
RU # O	SESENW Sec.13 T41S R23E UTM: 647,025 m E 4,121,000 m N	*13-22 to 13-33. 1 green chert uniface with brown patina; 1 tan quartzite, tertiary reduction flake.
RU # P	SWSESE Sec.12 T41S R23E UTM: 647,700 m E 4,121,725 m N	*13-31 to 12-44. 1 green-gray quartzite uniface.
RU # Q	NESESE Sec.13 T41S R23E UTM: 647,075 m E 4,121,100 m N	*13-22 to 13-31. 1 gray quartzite uniface with tan to brown patina.

* illustrated isolated finds.

note: all UTM coordinates are in zone 12.

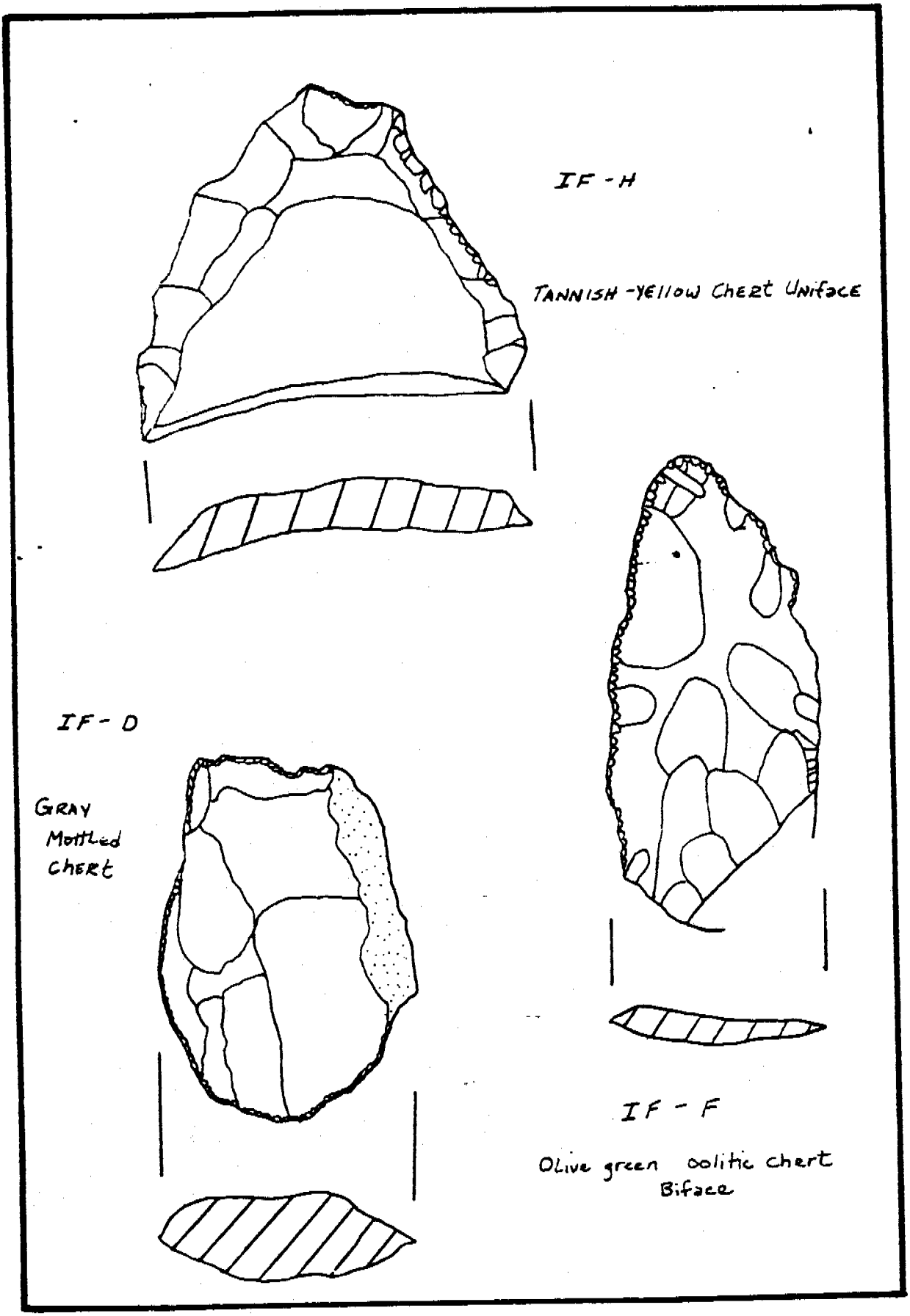

Figure 5. Flaked Stone Tools

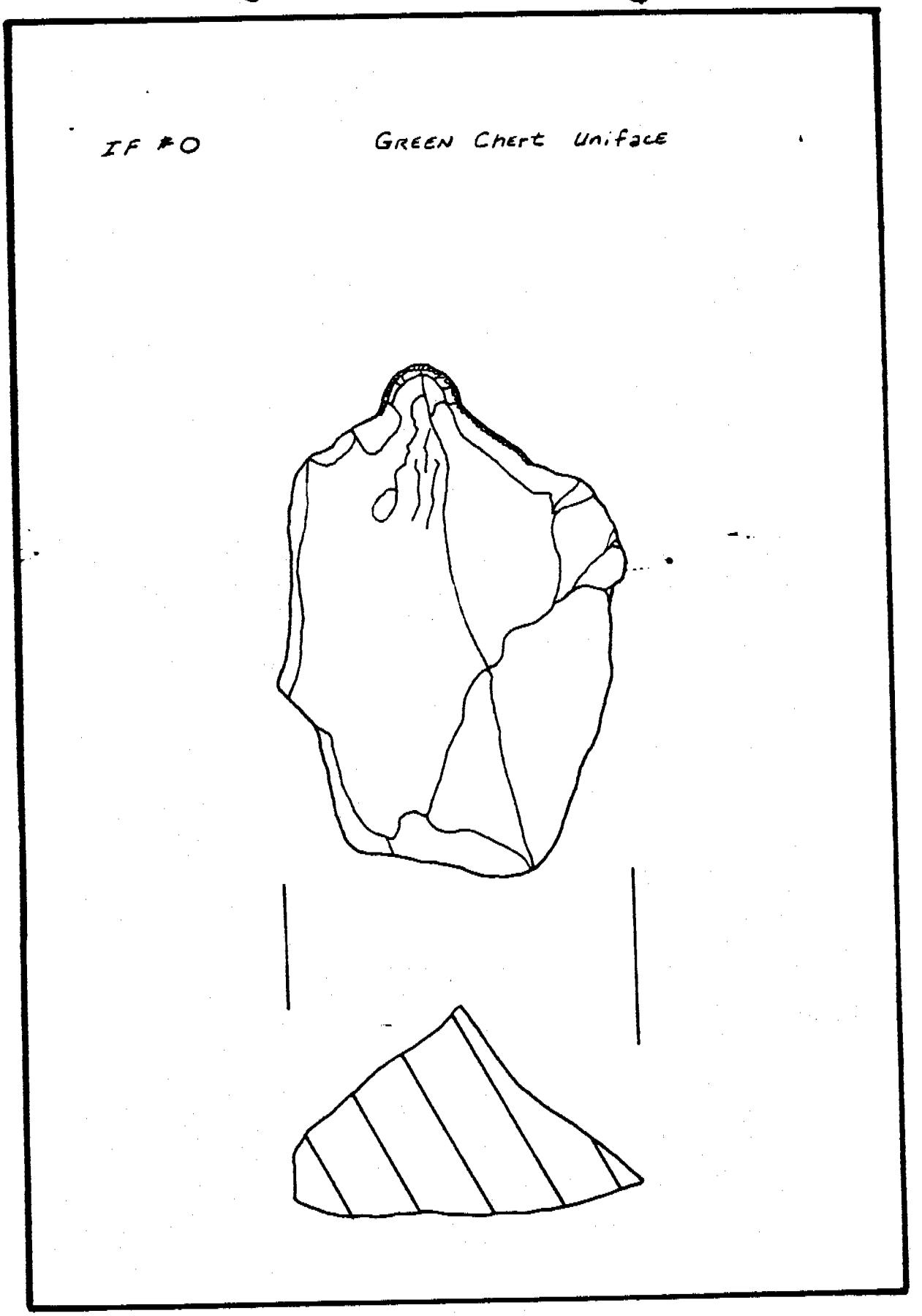

Figure 6. Flaked Stone Tool

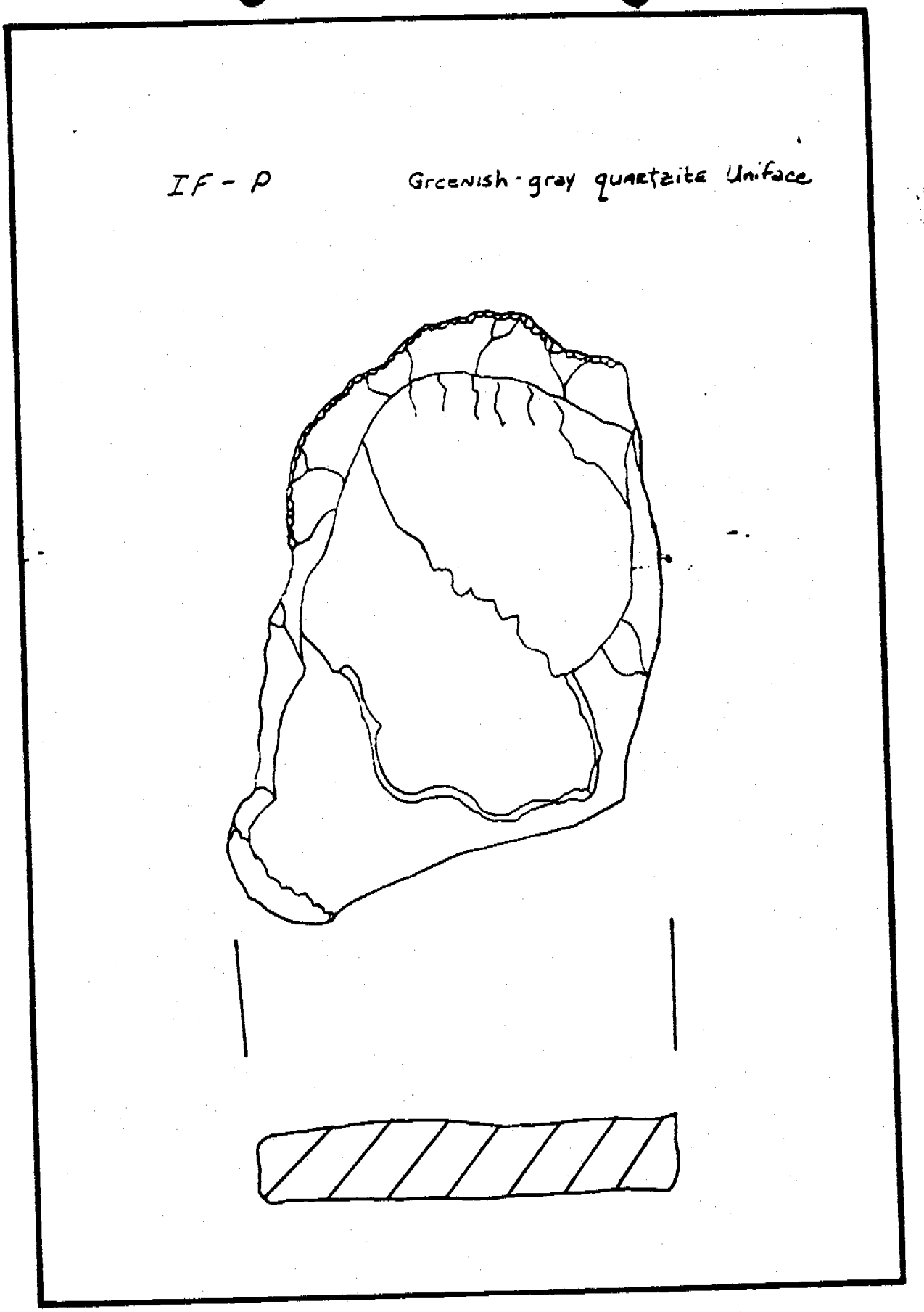

Figure 7. Flaked Stone Tool

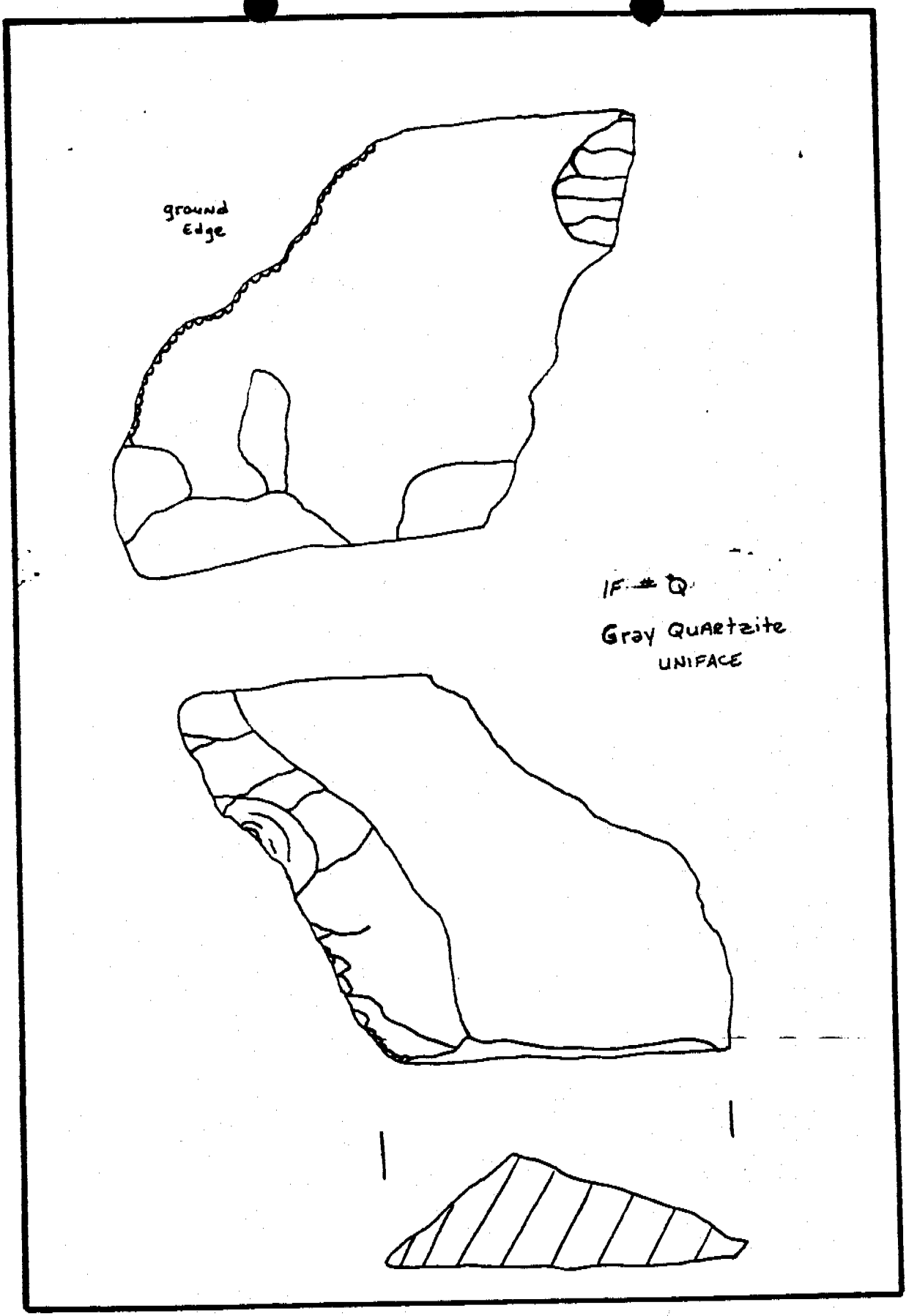

Figure 8. Flaked Stone Tool

SEE ATTACHMENT

RECOMMENDATIONS

One potentially significant archaeological site was encountered during the survey. As outlined in section "Results", the 100 meters of injection line (the mainline) west of line J can either be constructed as planned or rerouted. If the line is positioned as proposed, an archaeologist should be present to monitor construction of the 100 meters of mainline injection pipeline, extending east from line J. In the event that buried cultural deposits are encountered, construction should stop and the BIA area archaeologist be notified. The other alternative would be to reroute a portion of the mainline in order to avoid the site. An archaeological clearance would be needed if a new route is proposed. ← NEW ROUTE HAS BEEN SURVEYED SEE ATTACHMENT

The remaining cultural resources encountered during the survey were isolated finds which indicate prehistoric and modern use of the area. Most of these are the waste products from flint knapping activities. Several unifacial tools and one biface were also found. Recordation has exhausted the research potential of these isolated finds. Archaeological clearance is recommended for the proposed Rutherford Unit development project well locations, associated access roads and flow lines, and for the proposed injection line routes: mainline and lines A, B, C, D, E, F, F-1, G, H, I, and J, except for the 100 meter of mainline extnding east from its junction with line J.

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1981 "The Entry of Athapaskans into the American Southwest: the problem today", IN The Protohistoric Period in the North American Southwest, edited by D.R. Wilcox and W.B. Masse. Arizona State University Anthropological Research Papers, No. 24.

OPERATOR Phillips Oil Co. DATE 1-15-85

WELL NAME Rutherford Unit #13-34

SEC SWSE 13 T 41S R 23E COUNTY San Juan

43-037-31130
API NUMBER

Indian
TYPE OF LEASE

CHECK OFF:

[✓] PLAT	[✓] BOND	[✓] NEAREST WELL
[✓] LEASE	[✓] FIELD	[✓] POTASH OR OIL SHALE

PROCESSING COMMENTS:
Unit Well - Ok on P.O.D.
Water permit

APPROVAL LETTER:

SPACING: [✓] A-3 Rutherford UNIT [ ] c-3-a CAUSE NO. & DATE

[ ] c-3-b [ ] c-3-c

STIPULATIONS:
1- Water

11/2/84
25020

STATE OF UTAH
NATURAL RESOURCES
Oil, Gas & Mining

4241 State Office Building • Salt Lake City, UT 84114 • 801-533-5771

Scott M. Matheson, Governor
Temple A. Reynolds, Executive Director
Dianne R. Nielson, Ph.D., Division Director

January 17, 1985

Phillips Oil Company
P. O. Box 2920
Casper, Wyoming 82602

Gentlemen:

Re: Well No. Ratherford Unit #13-34 - SW SE Sec. 13, T. 41S, R. 23E
660' FSL, 1980' FEL - San Juan County, Utah

Approval to drill the above referenced oil well is hereby granted in accordance with Section 40-6-18, Utah Code Annotated, as amended 1983; and predicated on Rule A-3, General Rules and Regulations and Rules of Practice and Procedure, subject to the following stipulations:

1. Prior to commencement of drilling, receipt by the Division of evidence providing assurance of an adequate and approved supply of water.

In addition, the following actions are necessary to fully comply with this approval:

1. Spudding notification to the Division within 24 hours after drilling operations commence.

2. Submittal to the Division of completed Form OGC-8-X, Report of Water Encountered During Drilling.

3. Prompt notification to the Division should you determine that it is necessary to plug and abandon this well. Notify John R. Baza, Petroleum Engineer, (Office) (801) 538-5340, (Home) 298-7695 or R. J. Firth, Associate Director, (Home) 571-6068.

4. Compliance with the requirements and regulations of Rule C-27, Associated Gas Flaring, General Rules and Regulations, Oil and Gas Conservation.

5. This approval shall expire one (1) year after date of issuance unless substantial and continuous operation is underway or an application for an extension is made prior to the approval expiration date.

The API number assigned to this well is 43-037-31130.

Sincerely,

R. J. Firth
Associate Director, Oil & Gas

as
Enclosures
cc: Branch of Fluid Minerals
Bureau of Indian Affairs

9-331
1973

Form Approved.
Budget Bureau No. 42-R1424

UNITED STATES
DEPARTMENT OF THE INTERIOR
GEOLOGICAL SURVEY

SUNDRY NOTICES AND REPORTS ON WELLS

(Do not use this form for proposals to drill or to deepen or plug back to a different reservoir. Use Form 9-331-C for such proposals.)

RECEIVED
AUG 12 1985
DIVISION OF OIL

1. oil well [XX] gas well [ ] other
2. NAME OF OPERATOR: Phillips Oil Company
3. ADDRESS OF OPERATOR: 8055 E. Tufts Ave., Denver, CO 80237
4. LOCATION OF WELL (REPORT LOCATION CLEARLY. See space 17 below.)
   AT SURFACE: 660' FSL/1980' FEL (SW/SE)
   AT TOP PROD. INTERVAL:
   AT TOTAL DEPTH:

5. LEASE: 14-20-603-247-A
6. IF INDIAN, ALLOTTEE OR TRIBE NAME: Navajo
7. UNIT AGREEMENT NAME: SW-I-4192
8. FARM OR LEASE NAME: Ratherford Unit
9. WELL NO.: #13-34
10. FIELD OR WILDCAT NAME: Greater Aneth
11. SEC., T., R., M., OR BLK. AND SURVEY OR AREA: Sec. 13-T41S-R23E
12. COUNTY OR PARISH: San Juan
13. STATE: Utah
14. API NO.: 43-037-31130
15. ELEVATIONS (SHOW DF, KDB, AND WD): 4682' ungraded ground

16. CHECK APPROPRIATE BOX TO INDICATE NATURE OF NOTICE, REPORT, OR OTHER DATA

REQUEST FOR APPROVAL TO:		SUBSEQUENT REPORT OF:	
TEST WATER SHUT-OFF	[ ]		[ ]
FRACTURE TREAT	[ ]		[ ]
SHOOT OR ACIDIZE	[ ]		[ ]
REPAIR WELL	[ ]		[ ]
PULL OR ALTER CASING	[ ]		[ ]
MULTIPLE COMPLETE	[ ]		[ ]
CHANGE ZONES	[ ]		[ ]
ABANDON*	[ ]		[ ]
(other)			

(NOTE: Report results of multiple completion or zone change on Form 9-330.)

17. DESCRIBE PROPOSED OR COMPLETED OPERATIONS (Clearly state all pertinent details, and give pertinent dates, including estimated date of starting any proposed work. If well is directionally drilled, give subsurface locations and measured and true vertical depths for all markers and zones pertinent to this work.)*

Drilled 18" conductor hole to 121' G.L. on 5-27-85. Ran 120.7' 13-3/8" 54.5# K-55 BT&C casing. Set at 120.7', cemented with 177 cu.ft. (150 sx) Class B cement to surface. Finished job and moved out rat hole driller 5-27-85.

Spudded well 7-27-85 with Four Corners Drilling Rig #9. Drilled 12-1/4" hole to 1547'. Ran 9-5/8" 36# K-55 ST&C casing, set at 1546'. Cemented with 726 cu.ft. (300 sx) Class B w/20% Diacel D; tailed with 354 cu.ft. (300 sx) Class B. Circulated to surface, but fell back; pumped 100 sx Class B as top job. Job complete 7-30-85.

Subsurface Safety Valve: Manu. and Type _____ Set @ _____ Ft.

18. I hereby certify that the foregoing is true and correct

SIGNED _____ TITLE Drilling Director DATE August 7, 1985

(This space for Federal or State office use)

APPROVED BY _____ TITLE _____ DATE _____
CONDITIONS OF APPROVAL, IF ANY:

6-BLM, Farmington, NM
2-Utah O&GCC, SLC
1-Casper
1-File (RC)
1-J. Weichbrodt
1-Chevron USA, Inc.
1-Mobil Oil Corp.
1-Texaco

*See Instructions on Reverse Side

9-331
1973

Form Approved.
Budget Bureau No. 42-R1424

2

15

UNITED STATES
DEPARTMENT OF THE INTERIOR
GEOLOGICAL SURVEY

SUNDRY NOTICES AND REPORTS ON WELLS

RECEIVED
AUG 14 1985
DIVISION OF OIL
GAS & MINING

(Do not use this form for proposals to drill or to deepen or plug back to a different reservoir. Use Form 9-331-C for such proposals.)

1. oil well ☒ gas well ☐ other

2. NAME OF OPERATOR
PHILLIPS OIL COMPANY

3. ADDRESS OF OPERATOR
8055 E. Tufts Ave., Denver, CO 80237

4. LOCATION OF WELL (REPORT LOCATION CLEARLY. See space 17 below.)
AT SURFACE: 660' FSL/ 1980' FEL (SW/SE)
AT TOP PROD. INTERVAL:
AT TOTAL DEPTH:

5. LEASE
14-20-603-247-A

6. IF INDIAN, ALLOTTEE OR TRIBE NAME
Navajo

7. UNIT AGREEMENT NAME
SW-I-4192

8. FARM OR LEASE NAME
Ratherford Unit

9. WELL NO.
#13-34

10. FIELD OR WILDCAT NAME
Greater Aneth

11. SEC., T., R., M., OR BLK. AND SURVEY OR AREA
Sec. 13-T41S-R23E

12. COUNTY OR PARISH
San Juan

13. STATE
Utah

14. API NO.
43-037-31130

15. ELEVATIONS (SHOW DF, KDB, AND WD)
4682' ungraded ground

16. CHECK APPROPRIATE BOX TO INDICATE NATURE OF NOTICE, REPORT, OR OTHER DATA

REQUEST FOR APPROVAL TO:		SUBSEQUENT REPORT OF:
TEST WATER SHUT-OFF	☐	☐
FRACTURE TREAT	☐	☐
SHOOT OR ACIDIZE	☐	☐
REPAIR WELL	☐	☐
PULL OR ALTER CASING	☐	☐
MULTIPLE COMPLETE	☐	☐
CHANGE ZONES	☐	☐
ABANDON*	☐	☐
(other)		

(NOTE: Report results of multiple completion or zone change on Form 9-330.)

17. DESCRIBE PROPOSED OR COMPLETED OPERATIONS (Clearly state all pertinent details, and give pertinent dates, including estimated date of starting any proposed work. If well is directionally drilled, give subsurface locations and measured and true vertical depths for all markers and zones pertinent to this work.)*

Drilled 8-3/4" hole to 5518'. Ran 7" 23# & 26# K-55 LT&C, Butt & ST&C casing, set at 5517.6'; cemented with 1122 cu.ft. (550 sx) Class B Light; tailed with 360 cu.ft. (300 sx) Class B Neat w/18% salt. Pressure tested casing to 1200 psi. Job complete 8-9-85. Plug back total depth 5493'.

Subsurface Safety Valve: Manu. and Type _____ Set @ _____ Ft.

18. I hereby certify that the foregoing is true and correct

SIGNED _____ TITLE Drilling Manager DATE 8-12-85

(This space for Federal or State office use)

APPROVED BY _____ TITLE _____ DATE _____
CONDITIONS OF APPROVAL, IF ANY:

6-BLM, Farmington, NM
2-Utah O&GCC, SLC
1-Casper
1-File (RC)
1-J. Weichbrodt
1-Chevron USA, Inc.
1-Mobil Oil Corp.
1-Texaco, Inc.

*See Instructions on Reverse Side

1-Shell Oil Corp.

Form 3160-4
(November 1983)
(formerly 9-330)

Form approved.
Budget Bureau No. 1004-0137
Expires August 31, 1985

UNITED STATES
DEPARTMENT OF THE INTERIOR
BUREAU OF LAND MANAGEMENT

SUBMIT IN DUPLICATE* (See instructions on reverse side)

WELL COMPLETION OR RECOMPLETION REPORT AND LOG*

5. LEASE DESIGNATION AND SERIAL NO.: 14-20-603-247-A
6. IF INDIAN, ALLOTTEE OR TRIBE NAME: Navajo
7. UNIT AGREEMENT NAME: SW-I-4192
8. FARM OR LEASE NAME: Ratherford Unit
9. WELL NO.: 13-34
10. FIELD AND POOL, OR WILDCAT: Greater Aneth
11. SEC., T., R., M., OR BLOCK AND SURVEY OR AREA: Sec. 13-T41S-R23E

1a. TYPE OF WELL: OIL WELL [X] GAS WELL [ ] DRY [ ] Other
b. TYPE OF COMPLETION: NEW WELL [X] WORK OVER [ ] DEEP-EN [ ] PLUG BACK [ ] DIFF. RESVR. [ ] Other

2. NAME OF OPERATOR: Phillips Petroleum Company
3. ADDRESS OF OPERATOR: P.O. Box 2920, Casper, Wyoming 82602
4. LOCATION OF WELL (Report location clearly and in accordance with any State requirements)*
At surface: 660' FSL & 1980' FEL, SW SE
At top prod. interval reported below
At total depth

Per 06280
API #43-037-31130

14. PERMIT NO.: --
DATE ISSUED: 1-17-85
12. COUNTY OR PARISH: San Juan
13. STATE: Utah

15. DATE SPUDDED	16. DATE T.D. REACHED	17. DATE COMPL. (Ready to prod.)	18. ELEVATIONS (DF, RKB, RT, GR, ETC.)*	19. ELEV. CASINGHEAD
7/27/85	8/8/85	9/6/85	GR 4688.3', RKB 4701.3'	--

20. TOTAL DEPTH, MD & TVD	21. PLUG, BACK T.D., MD & TVD	22. IF MULTIPLE COMPL., HOW MANY*	23. INTERVALS DRILLED BY	ROTARY TOOLS	CABLE TOOLS
5518'	5495'	--		0-5518'	--

RECEIVED
OCT 17 1985
DIVISION OF OIL GAS & MINING

24. PRODUCING INTERVAL(S), OF THIS COMPLETION—TOP, BOTTOM, NAME (MD AND TVD)*: 5417' - 5492' Desert Creek Zone I

25. WAS DIRECTIONAL SURVEY MADE: No

26. TYPE ELECTRIC AND OTHER LOGS RUN: DLL-MSFL, CDL-CNL, Micro Electric, CBL

27. WAS WELL CORED: No

28. CASING RECORD (Report all strings set in well)

CASING SIZE	WEIGHT, LB./FT.	DEPTH SET (MD)	HOLE SIZE	CEMENTING RECORD	AMOUNT PULLED
13-3/8"	54.5#	121'	17-1/2"	177 cu. ft Class B	--
9-5/8"	36#	1546'	12-1/4"	1808 cu. ft. Class B	--
7"	23# & 26#	5517'	8-3/4"	1482 cu. ft. Class B	--

29. LINER RECORD

SIZE	TOP (MD)	BOTTOM (MD)	SACKS CEMENT*	SCREEN (MD)
--	--	--	--	--

30. TUBING RECORD

SIZE	DEPTH SET (MD)	PACKER SET (MD)
2-7/8"	5272'	--

31. PERFORATION RECORD (Interval, size and number)

5417-5466', 2 SPF, 4" HSC Gun, 98 Shots
5487-5492', 2 SPF, 4" HSC Gun, 10 Shots
23 gram charges

32. ACID, SHOT, FRACTURE, CEMENT SQUEEZE, ETC.

DEPTH INTERVAL (MD)	AMOUNT AND KIND OF MATERIAL USED
5417-5492'	Acidized each ft of perfs w/ 50 gal 28% HCL Acid. Acidized 2nd Stage w/5400 gal 28% HCL w/1 gal/1000 A-250 corrosion inhibitor, 3 gal/1000 W-802 non-emulsifier.

-Continued on Back-

33.* PRODUCTION

DATE FIRST PRODUCTION	PRODUCTION METHOD (Flowing, gas lift, pumping—size and type of pump)	WELL STATUS (Producing or shut-in)
9/6/85	Pumping 1-1/4"	Producing

DATE OF TEST	HOURS TESTED	CHOKE SIZE	PROD'N. FOR TEST PERIOD	OIL—BBL.	GAS—MCF.	WATER—BBL.	GAS-OIL RATIO
10/10/85	24	--	→	64	21	4	328

FLOW. TUBING PRESS.	CASING PRESSURE	CALCULATED 24-HOUR RATE	OIL—BBL.	GAS—MCF.	WATER—BBL.	OIL GRAVITY-API (CORR.)
--	--	→	64	21	4	40.0

34. DISPOSITION OF GAS (Sold, used for fuel, vented, etc.): Sold
TEST WITNESSED BY: --

35. LIST OF ATTACHMENTS: None

36. I hereby certify that the foregoing and attached information is complete and correct as determined from all available records

SIGNED D. C. Gill for TITLE Area Manager DATE 10/15/85

*(See Instructions and Spaces for Additional Data on Reverse Side)

Title 18 U.S.C. Section 1001, makes it a crime for any person knowingly and willfully to make to any department or agency of the United States any false, fictitious or fraudulent statements or representations as to any matter within its jurisdiction.

37. **SUMMARY OF POROUS ZONES: (Show all important zones of porosity and contents thereof; cored intervals; and all drill-stem, tests, including depth interval tested, cushion used, time tool open, flowing and shut-in pressures, and recoveries):**

FORMATION	TOP	BOTTOM	DESCRIPTION, CONTENTS, ETC.
Cont'd 26. Acid, Shot, Fracture, Cement Squeeze, Etc. 2 gal/1000 F-80 fines suspender and 6 gal/1000 U-42 iron agent. Used 150, 1.2 sp. gr., ball sealers. NO CORES OR DST'S RUN.			

DISTRIBUTION

4 - BLM, Farmington, NM
~~2~~ - Utah, O&GCC, Salt Lake City, UT
1 - The Navajo Nation, Window Rock, AZ
1 - R. Ewing, B'Ville
1 - L. Williamson r) G. W. Berk, Denver
1 - T. L. Carten r) P. Bertuzzi, Denver
1 - J. B. Lindemood, Denver
16 - W.I. Owners
1 - J. Weichbrodt, Cortez
1 - File RC

38. **GEOLOGIC MARKERS**

NAME	TOP MEAS. DEPTH	TOP TRUE VERT. DEPTH
LOG TOPS		
Shinarump		2182'
DeChelly		2507'
Hermosa		5248'
Ismay		5248'
Desert Creek Zone I		5414'

Mobil Oil Corporation

P.O. BOX 5444
DENVER, COLORADO 80217-5444

May 14, 1986

Utah Board of Oil, Gas and Mining
355 West North Temple
3 Triad Center, Suite 350
Salt Lake City, Utah 84180-1203

Attn: R. J. Firth
Associate Director

SUPERIOR OIL COMPANY MERGER

Dear Mr. Firth:
On September 20, 1984, The Superior Oil Company (Superior) became a wholly owned subsidiary of Mobil Corporation. Since January 1, 1985, Mobil Oil Corporation (MOC), another wholly owned subsidiary of Mobil Corporation, has acted as agent for Superior and has operated the Superior-owned properties.

On April 24, 1986, Superior was merged with Mobil Exploration and Producing North America Inc. (MEPNA), which is also a wholly owned subsidiary of Mobil Corporation. MEPNA is the surviving company of the merger.

This letter is to advise you that all properties held in the name of Superior will now be held in the name of MEPNA; and that these properties will continue to be operated by MOC as agent for MEPNA.

Attached is a listing of all wells and a separate listing of injection-disposal wells, Designation of Agent and an organization chart illustrating the relationships of the various companies. If you have any questions or require additional documentation of this merger, please feel free to contact me at the above address or (303) 298-2577.

Very truly yours,

R. D. Baker
Environmental Regulatory Manager

CNE/rd
CNE8661

FORM 10

STATE OF UTAH
DIVISION OF OIL, GAS AND MINING

MONTHLY OIL AND GAS PRODUCTION REPORT

OPERATOR NAME AND ADDRESS:

P J KONKEL
PHILLIPS PETROLEUM COMPANY
5525 HWY 64 NBU 3004
FARMINGTON NM 87401

RECEIVED
AUG 16 1993
DIVISION OF
OIL, GAS & MINING

ACCOUNT NUMBER: N0772

REPORT PERIOD (MONTH/YEAR): 6 / 93

AMENDED REPORT ☐ (Highlight Changes)

Well Name / API Number / Entity / Location	Producing Zone	Well Status	Days Oper	Production Volumes OIL(BBL)	GAS(MCF)	WATER(BBL)
#21-23 4303713754 06280 41S 24E 21	DSCR	POW	29	1374	883	58
#3-44 4303715031 06280 41S 24E 3	DSCR	POW	30	111	94	2905
#3-14 4303715124 06280 41S 24E 3	DSCR	POW	30	67	23	302
#9-12 4303715126 06280 41S 24E 9	DSCR	POW	30	112	654	17363
#9-14 4303715127 06280 41S 24E 9	DSCR	POW	30	201	315	423
#28-12 4303715336 06280 41S 24E 28	PRDX	POW	29	112	47	2428
#29-12 4303715337 06280 41S 24E 29	PRDX	POW	29	56	0	672
#29-32 4303715339 06280 41S 24E 29	DSCR	POW	29	1402	287	2224
#29-34 4303715340 06280 41S 24E 29	DSCR	POW	29	757	48	0
#30-32 4303715342 06280 41S 24E 30	DSCR	POW	29	588	1049	3744
#3-12 4303715620 06280 41S 24E 3	DSCR	POW	30	268	11	363
#9-34 4303715711 06280 41S 24E 9	DSCR	POW	30	45	46	9800
#10-12 4303715712 06280 41S 24E 10	DSCR	POW	30	45	23	1088
			TOTALS	5138	3480	41370

FINAL
8-18-93

COMMENTS: Effective July 1, 1993, Phillips Petroleum Company has sold its interest in the Ratherford Unit to Mobil Exploration and Producing U.S., Incorporated, P. O. Box 633, Midland, Texas 79702. Mobil assumed operations on July 1, 1993.

I hereby certify that this report is true and complete to the best of my knowledge. Date: 8/11/93

Name and Signature: PAT KONKEL Pat Konkel Telephone Number: 505 599-3452

(6/93)

FORM 9

STATE OF UTAH
DIVISION OF OIL, GAS AND MINING

SUNDRY NOTICES AND REPORTS ON WELLS

(Do not use this form for proposals to drill or to deepen or plug back to a different reservoir. Use "APPLICATION FOR PERMIT—" for such proposals.)

5. LEASE DESIGNATION & SERIAL NO.

6. IF INDIAN, ALLOTTEE OR TRIBE NAME: NAVAJO TRIBAL

1. OIL WELL ☐ GAS WELL ☐ OTHER

7. UNIT AGREEMENT NAME: RATHERFORD UNIT

2. NAME OF OPERATOR: MOBIL OIL CORPORATION

8. FARM OR LEASE NAME

3. ADDRESS OF OPERATOR: P. O. BOX 633 MIDLAND, TX 79702

9. WELL NO.

RECEIVED
SEP 15 1993
DIVISION OF
OIL, GAS & MINING

4. LOCATION OF WELL (Report location clearly and in accordance with any State requirements. See also space 17 below.)
At surface

At proposed prod. zone

10. FIELD AND POOL, OR WILDCAT: GREATER ANETH

11. SEC., T., R., M., OR BLK. AND SURVEY OR AREA

14. API NO.	15. ELEVATIONS (Show whether DF, RT, GR, etc.)	12. COUNTY	13. STATE
		SAN JUAN	UTAH

16. Check Appropriate Box To Indicate Nature of Notice, Report or Other Data

NOTICE OF INTENTION TO:				SUBSEQUENT REPORT OF:			
TEST WATER SHUT-OFF	☐	PULL OR ALTER CASING	☐	WATER SHUT-OFF	☐	REPAIRING WELL	☐
FRACTURE TREAT	☐	MULTIPLE COMPLETE	☐	FRACTURE TREATMENT	☐	ALTERING CASING	☐
SHOOT OR ACIDIZE	☐	ABANDON	☐	SHOOTING OR ACIDIZING	☐	ABANDONMENT*	☐
REPAIR WELL	☐	CHANGE PLANS	☐	(Other) CHANGE OF OPERATOR			
(Other)				(Note: Report results of multiple completion on Well Completion or Recompletion Report and Log form.)			

APPROX. DATE WORK WILL START _____

DATE OF COMPLETION _____

17. DESCRIBE PROPOSED OR COMPLETED OPERATIONS (Clearly state all pertinent details, and give pertinent dates, including estimated date of starting any proposed work. If well is directionally drilled, give subsurface locations and measured and true vertical depths for all markers and zones pertinent to this work.)

* Must be accompanied by a cement verification report.

AS OF JULY1, 1993, MOBIL OIL CORPORATION IS THE OPERATOR OF THE RATHERFORD UNIT. ATTACHED ARE THE INDIVIDUAL WELLS.

18. I hereby certify that the foregoing is true and correct

SIGNED Shirley Todd TITLE ENV. & REG TECHNICIAN DATE 9-8-93

(This space for Federal or State office use)

APPROVED BY _____ TITLE _____ DATE _____

CONDITIONS OF APPROVAL, IF ANY:

See Instructions On Reverse Side

(3/89)

12W-44	43-037-16405	14-20-603-246A	SEC. 12, T41S, R23E	SE/SE 660 FSL; 660 FEL
12W-44A	43-037-31543	14-20-603-246A	SEC. 12, T41S, R23E	SE/SE 807 FEL; 772 FSL
13-11W	43-037-31152	14-20-603-247A	SEC. 13, T41S, R23E	NW/NW 500 FNL; 660 FWL
13-12	43-037-31127	14-20-603-247A	SEC. 13, T41S, R23E	SW/NW 1705 FNL; 640 FWL
13W-13	43-037-15851	14-20-603-247A	SEC. 13, T41S, R23E	NW/SW 1980 FSL; 4620 FEL
13-14	43-037-31589	14-20-603-247A	SEC. 13, T41S, R23E	660 FSL; 660 FWL
13-21	43-037-31128	14-20-603-247A	SEC. 13, T41S, R23E	NE/NW 660 FNL; 1920 FWL
13W-22	43-037-15852	14-20-603-247A	SEC. 13, T41S, R23E	SE/NW 1988 FNL; 3300 FEL
13-23	43-037-31129	14-20-603-247A	SEC. 13, T41S, R23E	NE/SW 1980 FSL; 1930 FWL
~~13W-44~~	~~43-037-15853~~	~~14-20-603-247~~	~~SEC. 13, T41S, R23E~~	~~660 FSL; 3300 FEL~~
13W-32	43-037-16406	14-20-603-247A	SEC. 13, T41S, R23E	1881 FNL; 1979 FEL
13W-33	43-037-15855	14-20-603-247A	SEC. 13, T41S, R23E	NW/SE 1970 FSL; 1979 FEL
13W-34	43-037-31130	14-20-603-247A	SEC. 13, T41S, R23E	SW/SE 660 FSL; 1980 FEL
13-41	43-037-15856	14-20-603-247A	SEC. 13, T41S, R23E	NE/NE 660 FNL; 660 FEL
13W-42	43-037-15857	14-20-603-247A	SEC. 13, T41S, R23E	SE/NE 2139; 585 FEL
13-43	43-037-31131	14-20-603-247A	SEC. 13, T41S, R23E	NE/SE 1700 FSL; 960 FEL
13W-44	43-037-16407	14-20-603-247A	SEC. 13, T41S, R23E	SE/SE 635 FSL; 659 FEL
~~14-03~~	~~NA~~	~~14-20-603-4037~~	~~SEC. 11, T41S, R23E~~	~~SW/SW 660 FSL; 660 FEL~~
14-32	43-037-15858	14-20-603-247A	SEC. 14, T41S, R23E	2130 FNL; 1830 FEL
14-41	43-037-31623	14-20-603-247A	SEC. 14, T41S, R23E	NE/NE 521 FEL; 810 FNL
14W-42	43-037-15860	14-20-603-247A	SEC. 14, T41S, R23E	SE/NE 1976 FNL; 653 FEL
14W-43	43-037-16410	14-20-603-247A	SEC. 14, T41S, R23E	3300 FSL; 4770 FEL
14-33	43-037-15859	14-20-603-247	SEC. 14, T41S, R23E	2130 FSL; 1830 FEL
15-12	43-037-15715	14-20-603-355	SEC. 15, T41S, R24E	1820 FNL; 500 FWL
15W-21	43-037-16411	14-20-603-355	SEC. 15, T41S, R24E	660 FNL; 1820 FWL
15-22	43-037-30449	14-20-603-355	SEC. 15, T41S, R24E	SE/NW, 1980 FNL; 2050 FWL
15-32	43-037-15717	14-20-603-355A	SEC. 15, T41S, R24E	1980 FNL; 1980 FEL
15-33	43-037-15718	14-20-603-355	SEC. 15, T41S, R24E	NW/SE 1650 FSL; 1980 FEL
15-41	43-037-15719	14-20-603-355	SEC. 15, T41S, R24E	660 FNL; 660' FEL
15-42	43-037-30448	14-20-603-355	SEC. 15, T41S, R24E	SE/NE 2020 FNL; 820 FEL
16W-12	43-037-15720	14-20-603-355	SEC. 16, T41S, R24E	SW/NW 1880 FNL; 660 FWL
16-13	43-037-31168	14-20-603-355	SEC. 16, T41S, R24E	1980 FSL; 660 FWL
16W-14	43-037-15721	14-20-603-355	SEC. 16, T41S, R24E	SW/SW 660 FSL; 660 FWL
16W-21	43-037-16414	14-20-603-355	SEC. 16, T41S, R24E	NE/NW 660 FNL; 1880 FWL
16W-23	43-037-15722	14-20-603-355	SEC. 16, T41S, R24E	NE/SW 1980 FSL; 1980 FWL
16-32	43-037-15723	14-20-603-355	SEC. 16, T41S, R24E	1980 FNL; 1980' FEL
16-34	43-037-15724	14-20-603-355	SEC. 16, T41S, R24E	660 FNL; 1980' FEL
16-41	43-037-15725	14-20-603-355	SEC. 16, T41S, R24E	660 FNL; 660 FEL
16W-43	43-037-16415	14-20-603-355	SEC. 16, T41S, R24E	NE/SE 2140 FSL; 820 FEL
17-11	43-037-31169	14-20-603-353	SEC. 17, T41S, R24E	NW/NW 1075' FNL; 800' FWL
17W-12	43-037-15726	14-20-603-353	SEC. 17, T41S, R24E	SW/NW 1980' FNL; 510' FWL
17-13	43-037-31133	14-20-603-353	SEC. 17, T41S, R24E	NW/SW 2100' FSL; 660' FWL
17W-14	43-037-15727	14-20-603-353	SEC. 17, T41S, R24E	SW/SW 660' FSL; 660' FWL
17W-21	43-037-16416	14-20-603-353	SEC. 17, T41S, R24E	510' FNL; 1830' FWL
17-22	43-037-31170	14-20-603-353	SEC. 17, T41S, R24E	1980' FNL; 1980' FWL
17W-23	43-037-15728	14-20-603-353	SEC. 17, T41S, R24E	NE/SW 1980' FWL; 1880' FSL
17-31	43-037-31178	14-20-603-353	SEC. 17, T41S, R24E	NW/NE 500' FNL; 1980' FEL
17-32W	43-037-15729	14-20-603-353	SEC. 17, T41S, R24E	SW/NE 1830' FNL; 2030' FEL
17-33	43-037-31134	14-20-603-353	SEC. 17, T41S, R24E	NW/SE 1980' FSL; 1845' FEL
17-34W	43-037-15730	14-20-603-353	SEC. 17, T41S, R24E	SW/SE 560' FSL; 1880' FEL
17W-41	43-037-15731	14-20-603-353	SEC. 17, T41S, R24E	610' FNL; 510' FEL
17-42	43-037-31177	14-20-603-353	SEC. 17, T41S, R24E	SE/NE 1980; FNL, 660' FEL
17-44	43-037-15732	14-20-603-353	SEC. 17, T41S, R24E	660 FSL; 660' FEL
17W-43	43-037-16417	14-20-603-353	SEC. 17, T41S, R24E	NE/SE 1980' FSL; 660' FEL
18-11	43-037-15733	14-20-603-353	SEC. 18, T41S, R24E	NW/NW 720' FNL; 730' FWL
18-12W	43-037-31153	14-20-603-353	SEC. 18, T41S, R24E	SW/NW 1980' FNL; 560' FWL
18W-21	43-037-16418	14-20-603-353	SEC. 18, T41S, R24E	NE/NW 660' FNL; 1882' FWL
18-22	43-037-31236	14-20-603-353	SEC. 18, T41S, R24E	SW/NW 2200' FNL; 2210' FWL
18W-23	43-037-30244	14-20-603-353	SEC. 18, T41S, R24E	NE/SW 2385' FSL; 2040' FWL
18W-14	43-037-15735	14-20-603-353	SEC. 18, T41S, R24E	SW/SW 810' FSL; 600' FWL
18-24	43-037-31079	14-20-603-353	SEC. 18, T41S, R24E	SE/SW 760' FSL; 1980' FWL
18-31	43-037-31181	14-20-603-353	SEC. 18, T41S, R24E	NW/NE 795' FNL; 2090; FEL
~~18W-32~~	~~43-037-15736~~	~~14-20-603-353~~	~~SEC. 18, T41S, R24E~~	~~SW/NE 2140' FNL; 1830' FEL~~
18-33	43-037-31135	14-20-603-353	SEC. 18, T41S, R24E	NW/SE 1870' FSL; 1980' FEL
18-34W	43-037-15737	14-20-603-353	SEC. 18, T41S, R24E	SW/SE 780' FSL; 1860 FEL
18W-41	43-037-15738	14-20-603-353	SEC. 18, T41S, R24E	NE/NE 660' FNL; 660' FEL
18-42	43-037-31182	14-20-603-353	SEC. 18, T41S, R24E	SE/NE 2120' FNL; 745' FEL
18W-43	43-037-16419	14-20-603-353	SEC. 18, T41S, R24E	NE/SE 1980' FSL; 660' FEL
18-44	43-037-31045	14-20-603-353	SEC. 18, T41S, R24E	SE/SE 660' FSL; 660' FEL
19-11	43-037-31080	14-20-603-353	SEC. 19, T41S, R24E	NW/NW 660' FNL; 660' FWL
19-12	43-037-15739	14-20-603-353	SEC. 19, T41S, R24E	600' FWL; 1980' FNL
19-14	43-037-15740	14-20-603-353	SEC. 19, T41S, R24E	600' FSL; 660' FEL

FORM 11

STATE OF UTAH
DIVISION OF OIL, GAS AND MINING

MONTHLY OIL AND GAS DISPOSITION REPORT

OPERATOR NAME AND ADDRESS:

L. Sheffield
~~BRIAN BERRY~~
~~M E P N A~~ MOBIL
~~POB 219031 1807A RENTWR~~ P.O. DRAWER G
~~DALLAS TX 75221-9031~~ CORTEZ, Co. 81321

UTAH ACCOUNT NUMBER: N7370

REPORT PERIOD (MONTH/YEAR): 7 / 93

AMENDED REPORT ☐ **(Highlight Changes)**

*931006 updated. fe

ENTITY NUMBER	PRODUCT	GRAVITY BTU	BEGINNING INVENTORY	VOLUME PRODUCED	DISPOSITIONS TRANSPORTED	DISPOSITIONS USED ON SITE	DISPOSITIONS FLARED/VENTED	DISPOSITIONS OTHER	ENDING INVENTORY
05980	OIL			177609	177609	0			
	GAS			72101	66216	5885			
11174	OIL								
	GAS								
	OIL								
	GAS								
	OIL								
	GAS								
	OIL								
	GAS								
	OIL								
	GAS								
	OIL								
	GAS								
TOTALS				249710	243825	5885			

RECEIVED
SEP 13 1993
DIVISION OF
OIL, GAS & MINING

COMMENTS: PLEASE NOTE ADDRESS CHANGE. MOBIL ~~E&P~~ PRODUCTION REPORTS WILL BE COMPILED AND SENT FROM THE CORTEZ, Co. OFFICE IN THE FUTURE.

I hereby certify that this report is true and complete to the best of my knowledge.

Date: 9/6/93

Name and Signature: Lowell B Sheffield

Telephone Number: ~~214 658 2528~~ 303 565 2212

(6/93)

FORM=NR0003.FRM 07/2

Sept 29, 1993

TO: Lisha Cordova - Utah Mining Oil & Gas

FROM: Janice Easley
BLM Farmington, NM
505 599-6355

Here is copy of Rutherford Unit Successor Operator.

4 pages including this one.

Ltr Ratherford Unit (GC)

Navajo Area Office
P. O. Box 1060
Gallup, New Mexico 87305-1060

ARES/543

JUL 26 1993

Mr. G. D. Cox
Mobil Exploration and
Producing North America, Inc.
P. O. Box 633
Midland, Texas 79702

Dear Mr. Cox:

Enclosed for your information and use is the approved Designation of Operator between the Phillips Petroleum Company and Mobil Exploration and Producing North America, Inc. for the Ratherford Unit.

Please note that all other concerned parties will be furnished their copy of the approved document.

Sincerely,

ACTING Area Director

Enclosure

cc: Bureau of Land Management, Farmington District Office w/enc.
TNN, Director, Minerals Department w/enc.

UNITED STATES
DEPARTMENT OF THE INTERIOR
BUREAU OF INDIAN AFFAIRS

DESIGNATION OF OPERATOR

Phillips Petroleum Company is, on the records of the Bureau of Indian Affairs, operator of the Ratherford Unit,

AREA OFFICE: Window Rock, Arizona
LEASE NO: Attached hereto as Exhibit "A"

and, pursuant to the terms of the Ratherford Unit Agreement, is resigning as Unit Operator effective July 1, 1993, and hereby designates

NAME: Mobil Exploration and Producing North America Inc., duly elected pursuant to the terms of the Ratherford Unit Agreement,

ADDRESS: P. O. Box 633, Midland, Texas 79702
Attn: G. D. Cox

as Operator and local agent, with full authority to act on behalf of the Ratherford Unit lessees in complying with the terms of all leases and regulations applicable thereto and on whom the authorized officer may serve written or oral instructions in securing compliance with the Operating Regulations (43 CFR 3160 and 25 CFR 211 and 212) with respect to (described acreage to which this designation is applicable):

Attached hereto as Exhibit "A"

Bond coverage under 25 CFR 211, 212 or 225 for lease activities conducted by the above named designated operator is under Bond Number 05202782 (attach copy). Evidence of bonding is required prior to the commencement of operations.

It is understood that this designation of operator does not relieve any lessee of responsibility for compliance with the terms of the leases and the Operating Regulations. It is also understood that this designation of operator does not constitute an assignment of any interest in the leases.

In case of default on the part of the designated operator, the lessees will make full and prompt compliance with all regulations, lease terms, stipulations, or orders of the Secretary of the Interior or his representative.

Attached is the appropriate documentation relevant to this document.

The designated operator agrees to promptly notify the authorized officer of any change in the operatorship of said Ratherford Unit.

Phillips Petroleum Company

June 17, 1993

By: M. B. Smith, J.
Attorney-in-Fact

Mobil Exploration and Producing
North America Inc.

June 11, 1993

By: B. D. Martiny
Attorney-in-Fact B.D. MARTINY

ACTING AREA DIRECTOR 7/9/93
APPROVED BY TITLE DATE

APPROVED PURSUANT, TO SECRETARIAL REDELEGATION ORDER 209 DM 8 AND 230 DM 3.
This form does not constitute an information collection as defined by 44 U.S.C. 3502 and therefore does not require OMB approval.

EXHIBIT "A"

ATTACHED TO AND MADE A PART OF DESIGNATION OF SUCCESSOR OPERATOR, RATHERFORD UNIT

EXHIBIT "C"

Revised as of September 29, 1992
SCHEDULE OF TRACT PERCENTAGE PARTICIPATION

Tract Number	Description of Land	Serial Number and Effective Date of Lease	Tract Percentage Participation
1	S/2 Sec. 1, E/2 SE/4 Sec. 2, E/4 Sec. 11, and all of Sec. 12, T-41-S, R-23-E, S.L.M. San Juan County, Utah	14-20-603-246-A Oct. 5, 1953	11.0652565
2	SE/4 and W/2 SW/4 Sec. 5, the irregular SW/4 Sec. 6, and all of Sec. 7 and 8, T-41-S, R-24-E, San Juan County, Utah	14-20-603-368 Oct. 26, 1953	14.4159942
3	SW/4 of Sec. 4, T-41-S, R-24-E, San Juan County, Utah	14-20-603-5446 Sept. 1, 1959	.5763826
4	SE/4 Sec. 4, and NE/4 Sec. 9, T-41-S, R-24-E, San Juan County, Utah	14-20-603-4035 March 3, 1958	1.2587779
5	SW/4 of Sec. 3, T-41-S, R-24-E, S.L.M., San Juan County, Utah	14-20-603-5445 Sept. 3, 1959	.4667669
6	NW/4 of Sec. 9, T-41-S, R-24-E, S.L.M., San Juan County, Utah	14-20-603-5045 Feb. 4, 1959	1.0187043
7	NW/4, W/2 NE/4, and SW/4 Sec. 10, SE/4 Sec. 9, T-41-S, R-24-E, San Juan County, Utah	14-20-603-4043 Feb. 18, 1958	3.5097575
8	SW/4 Sec. 9, T-41-S, R-24-E, S.L.M. San Juan County, Utah	14-20-603-5046 Feb. 4, 1959	1.1141679
9	SE/4 Sec. 10 and S/2 SW/4 Sec. 11 T-41-S, R-24-E, San Juan County, Utah	14-20-603-4037 Feb. 14, 1958	2.6186804
10	All of Sec. 13, E/2 Sec. 14, and E/2 SE/4 and N/2 Sec. 24, T-41-S, R-23-E, S.L.M., San Juan County, Utah	14-20-603-247-A Oct. 5, 1953	10.3108861
11	Sections 17, 18, 19 and 20, T-41-S, R-24-E, San Juan County Utah	14-20-603-353 Oct. 27, 1953	27.3389265
12	Sections 15, 16, 21, and NW/4, and W/2 SW/4 Sec. 22, T-41-S, R-24-E, San Juan County, Utah	14-20-603-355 Oct. 27, 1953	14.2819339
13	W/2 Section 14, T-41-S, R-24-E, San Juan County, Utah	14-20-603-370 Oct. 26,1953	1.8500847
14	N/2 and SE/4, and E/2 SW/4 Sec. 29, NE/4 and E/2 SE/4 and E/2 W/2 irregular Sec. 30, and E/2 NE/4 Sec. 32, T-41-S, R-24-E, San Juan County, Utah	14-20-603-407 Dec. 10, 1953	6.9924969
15	NW/4 Sec. 28, T-41-S, R24-E San Juan County, Utah	14-20-603-409 Dec. 10, 1953	.9416393
16	SE/4 Sec. 3, T-41-S, R-24-E San Juan County, Utah	14-20-0603-6504 July 11, 1961	.5750254
17	NE/4 Sec. 3, T-41-S, R-24-E San Juan County, Utah	14-20-0603-6505 July 11, 1961	.5449292
18	NW/4 Sec. 3, T-41-S, R-24-E San Juan County, Utah	14-20-0603-6506 July 11, 1961	.5482788
19	NE/4 Sec. 4, T-41-S, R24-E San Juan County, Utah	14-20-0603-7171 June 11, 1962	.4720628
20	E/2 NW/4 Sec. 4, T-41-S, R-24-E San Juan County, Utah	14-20-0603-7172 June 11, 1962	.0992482
100% Indian Lands		TOTAL 12,909.74	100.0000000

Division of Oil, Gas and Mining

PHONE CONVERSATION DOCUMENTATION FORM

Route original/copy to:

[ ] Well File _____

_____

(Location) Sec___Twp___Rng___

(API No.) _____

[ ] Suspense

(Return Date) _____

(To - Initials) _____

[XX] Other

OPERATOR CHANGE

_____

_____

1. Date of Phone Call: 10-6-93 Time: 9:30

2. DOGM Employee (name) L. CORDOVA (Initiated Call [XX])

Talked to:

Name GLEN COX (Initiated Call [ ]) - Phone No. (915)688-2114

of (Company/Organization) MOBIL

3. Topic of Conversation: OPERATOR CHANGE FROM PHILLIPS TO MOBIL "RATHERFORD UNIT".

(NEED TO CONFIRM HOW OPERATOR WANTS THE WELLS SET UP - MEPNA AS PER BIA APPROVAL

OR MOBIL OIL CORPORATION AS PER SUNDRY DATED 9-8-93?)

4. Highlights of Conversation:

MR. COX CONFIRMED THAT THE WELLS SHOULD BE SET UNDER ACCOUNT N7370/MEPNA AS PER BIA APPROVAL, ALSO CONFIRMED THAT PRODUCTION & DISPOSITION REPORTS WILL NOW BE HANDLED OUT OF THEIR CORTEZ OFFICE RATHER THAN DALLAS.

MEPNA-

PO DRAWER G

CORTEZ, CO 81321

(303)565-2212

*ADDRESS CHANGE AFFECTS ALL WELLS CURRENTLY OPERATORED BY MEPNA, CURRENTLY REPORTED OUT OF DALLAS (MCELMO CREEK).

Division of Oil, Gas and Mining
OPERATOR CHANGE WORKSHEET

Routing:
1-VLC/DTS-SJ
2-DTS/SJ-RJF
3-VLC
4-RJF
5-LEC
6-PL

Attach all documentation received by the division regarding this change.
Initial each listed item when completed. Write N/A if item is not applicable.

XX Change of Operator (well sold) ☐ Designation of Agent
☐ Designation of Operator ☐ Operator Name Change Only

The operator of the well(s) listed below has changed (EFFECTIVE DATE: 7-1-93)

TO (new operator) MEPNA
(address) PO DRAWER G
CORTEZ, CO 81321
GLEN COX (915)688-2114
phone (303) 565-2212
account no. N7370

FROM (former operator) PHILLIPS PETROLEUM COMPANY
(address) 5525 HWY 64 NBU 3004
FARMINGTON, NM 87401
PAT KONKEL
phone (505) 599-3452
account no. N0772(A)

Well(s) (attach additional page if needed): *RATHERFORD UNIT (NAVAJO)

Name: **SEE ATTACHED**	API: 43037-31130	Entity:	Sec	Twp	Rng	Lease Type:
Name:	API:	Entity:	Sec	Twp	Rng	Lease Type:
Name:	API:	Entity:	Sec	Twp	Rng	Lease Type:
Name:	API:	Entity:	Sec	Twp	Rng	Lease Type:
Name:	API:	Entity:	Sec	Twp	Rng	Lease Type:
Name:	API:	Entity:	Sec	Twp	Rng	Lease Type:
Name:	API:	Entity:	Sec	Twp	Rng	Lease Type:

OPERATOR CHANGE DOCUMENTATION

Lec 1. (Rule R615-8-10) Sundry or other legal documentation has been received from former operator (Attach to this form). (Req. 8-20-93) (6/93 Prod. Rpt. 8-16-93)

Lec 2. (Rule R615-8-10) Sundry or other legal documentation has been received from new operator (Attach to this form). (Req. 8-31-93) (Rec'd 9-14-93)

N/A 3. The Department of Commerce has been contacted if the new operator above is not currently operating any wells in Utah. Is company registered with the state? (yes/no) _____ If yes, show company file number: _____.

Lec 4. **(For Indian and Federal Wells ONLY)** The BLM has been contacted regarding this change (attach Telephone Documentation Form to this report). Make note of BLM status in comments section of this form. Management review of **Federal and Indian** well operator changes should take place prior to completion of steps 5 through 9 below.

Lec 5. Changes have been entered in the Oil and Gas Information System (Wang/IBM) for each well listed above. (O&G wells 10-6-93) (WIW's 10-26-93)

Lec 6. Cardex file has been updated for each well listed above. (O&G wells 10-6-93) (WIW's 10-26-93)

Lec 7. Well file labels have been updated for each well listed above. (O&G wells 10-6-93) (WIW's 10-26-93)

Lec 8. Changes have been included on the monthly "Operator, Address, and Account Changes" memo for distribution to State Lands and the Tax Commission. (10-6-93)

Lec 9. A folder has been set up for the Operator Change file, and a copy of this page has been placed there for reference during routing and processing of the original documents.

– OVER –

PERATOR CHANGE WORKSHEET (CONTINUED) Initial each item when completed. Write N/A if item is not applicable.

NTITY REVIEH

Lec 1. (Rule R615-8-7) Entity assignments have been reviewed for all wells listed above. Were entity changes made? (yes/no) ____ (If entity assignments were changed, attach copies of Form 6, Entity Action Form).

N/A 2. State Lands and the Tax Commission have been notified through normal procedures of entity changes.

OND VERIFICATION (Fee wells only)

Lec/N/A 1. (Rule R615-3-1) The new operator of any fee lease well listed above has furnished a proper bond.

__ 2. A copy of this form has been placed in the new and former operators' bond files.

__ 3. The former operator has requested a release of liability from their bond (yes/no) ___. Today's date _____ 19___. If yes, division response was made by letter dated _____ 19___.

LEASE INTEREST OHNER NOTIFICATION RESPONSIBILITY

N/A 1. (Rule R615-2-10) The former operator/lessee of any **fee lease** well listed above has been notified by letter dated _____ 19___, of their responsibility to notify any person with an interest in such lease of the change of operator. Documentation of such notification has been requested.

DTS 11-10-93

N/A 2. Copies of documents have been sent to State Lands for changes involving **State leases**.

FILMING

✓ 1. All attachments to this form have been microfilmed. Date: 11.17 1993.

FILING

Lec 1. Copies of all attachments to this form have been filed in each well file.

Lec 2. The original of this form and the original attachments have been filed in the Operator Change file.

COMMENTS

931006 BIA/Blm Approved 7-9-93.

E71/34-35

Form 3160-5
(June 1990)

UNITED STATES
DEPARTMENT OF THE INTERIOR
BUREAU OF LAND MANAGEMENT

RECEIVED
MAY 3 1995
DIV. OF OIL, GAS & MINING

FORM APPROVED
Budget Bureau No. 1004-0135
Expires: March 31, 1993

SUNDRY NOTICES AND REPORTS ON WELLS

Do not use this form for proposals to drill or to deepen or reentry to a different reservoir.
Use "APPLICATION FOR PERMIT - " for such proposals.

SUBMIT IN TRIPLICATE

5. Lease Designation and Serial No.: 14-20-603-247A
6. If Indian, Allottee or Tribe Name: NAVAJO TRIBAL
7. If Unit or CA, Agreement Designation: RATHERFORD UNIT

1. Type of Well: [X] Oil Well [ ] Gas Well [ ] Other
2. Name of Operator: Mobil Exploration & Producing U.S. Inc. as Agent for Mobil Producing TX & NM Inc.
3. Address and Telephone No.: P.O. Box 633, Midland, TX 79702 915-688-2585
4. Location of Well (Footage, Sec., T., R., M., or Survey Description): 660' FSL, 1980 FEL SW¼ SE¼ SEC. 13, T41S, R23E BHL 707' FNL, 707' FWL NW¼ NW¼
8. Well Name and No.: RATHERFORD 13-34
9. API Well No.: 43-037-31130
10. Field and Pool, or exploratory Area: GREATER ANETH
11. County or Parish, State: SAN JUAN UT

12. CHECK APPROPRIATE BOX(s) TO INDICATE NATURE OF NOTICE, REPORT, OR OTHER DATA

TYPE OF SUBMISSION	TYPE OF ACTION	
[X] Notice of Intent	[ ] Abandonment	[ ] Change of Plans
[ ] Subsequent Report	[ ] Recompletion	[ ] New Construction
[ ] Final Abandonment Notice	[ ] Plugging Back	[ ] Non-Routine Fracturing
	[ ] Casing Repair	[ ] Water Shut-Off
	[ ] Altering Casing	[ ] Conversion to Injection
	[X] Other SIDETRACK	[ ] Dispose Water

(Note: Report results of multiple completion on Well Completion or Recompletion Report and Log form.)

13. Describe Proposed or Completed Operations (Clearly state all pertinent details, and give pertinent dates, including estimated date of starting any proposed work. If well is directionally drilled, give subsurface locations and measured and true vertical depths for all markers and zones pertinent to this work.)*

SEE ATTACHMENT

Approved ~~Accepted~~ by the Utah Division of Oil, Gas and Mining

FOR RECORD ONLY

14. I hereby certify that the foregoing is true and correct
Signed Shirley Robertson Title ENV. & REG. TECHNICIAN Date 5-1-95

(This space for Federal or State office use)
Approved by A Matthews Title Petroleum Engineer Date 5-5-95
Conditions of approval, if any:

Title 18 U.S.C. Section 1001, makes it a crime for any person knowingly and willfully to make to any department or agency of the United States any false, fictitious or fraudulent statements or representations as to any matter within its jurisdiction.

* See Instruction on Reverse Side

Generic Ratherford Unit
Horizontal Drilling Procedure

The objective of this procedure is to prepare this wellbore for sidetracking, sidetrack the subject well and drill a short radius horizontal well with a 1000' lateral.

1. Prepare location and dig working pit.

2. MIRU DDPU (daylight workover rig), reverse unit and H2S equipment.

3. TOH and LD rods.

4. ND wellhead, release TAC, and NU BOPs.

5. TIH with full gauge bit and casing scraper to PBTD. TOH with bit and scraper.

6. Attempt to load hole and establish an injection rate (if the injection pressure is > 500 psi, a packer should be run to establish an injection rate).

7. MIRU wireline truck. Run gauge ring and junk basket to PBTD. Run a gyro survey from PBTD to surface. Run and set a cement retainer ±100' above the top perforation. RD wireline truck.

8. TIH with star guide and stop 30' above the cement retainer. Circulate until well is static and free of oil and gas. Sting into cement retainer and establish injection rate. Pressure annulus to 500 psi. Squeeze cement the existing Desert Creek perforations. Pull out of retainer leaving 1 bbl of cement on top of the retainer and reverse out. TOH with star guide laying down tubing.

9. TIH with 4 3/4" bit and drill collars picking up 2 7/8" 10.40 ppf E-75 AOH workstring. Drill cement retainer and cement to original PBTD. Circulate hole clean and them mud-up system until a yield point of 40-50 is obtained. TOH with bit.

10. TIH with 4 1/2" section mill dressed with cutter arms for casing size to 2' below the Gothic Shale. Mill 25' section in casing . Circulate the hole clean and TOH with section mill.

11. TIH with gauge bit and clean out to TD. Circulate hole clean and TOH with bit.

12. TIH with 10 jts 2 3/8" tubing on 2 7/8" DP to TD. Circulate the well until static and free of oil and gas. Spot a balanced cement kick-off plug. TOH with workstring. WOC a minimum of 12 hours.

13. TIH and tag cement plug and re-spot plug if the top is to low. TOH and LD workstring . ND BOPs and NU wellhead. RDMO daylight workover rig.

14. MIRU 24 hour DDPU with drilling package. TIH with gauge MT bit, DCs, and 2 7/8", 10.4ppf, AOH drillpipe.

15. Dress off cement plug to the kick off point 3' below the casing section. Treat water and mud up with XC polymer. POOH.

16. PU curve drilling assembly and TIH on 2 7/8" DP to PBTD.

17. RU power swivel and wireline. Latch into gyro tool and orient BHA.

18. Sidetrack wellbore using gyro orientation. Switch to Magnetic steering tool when free of magnetic interference from casing.

19. Drill curve section using steering tool for orientation. POOH and LD curve drilling motor.

20. PU lateral drilling motor and new bit.

21. TIH with lateral drilling assembly. Steer assembly as necessary with steering tool to reach target. Make bit trips as necessary. Circulate wellbore clean and POOH.

22. Complete well as per operations Engineering.

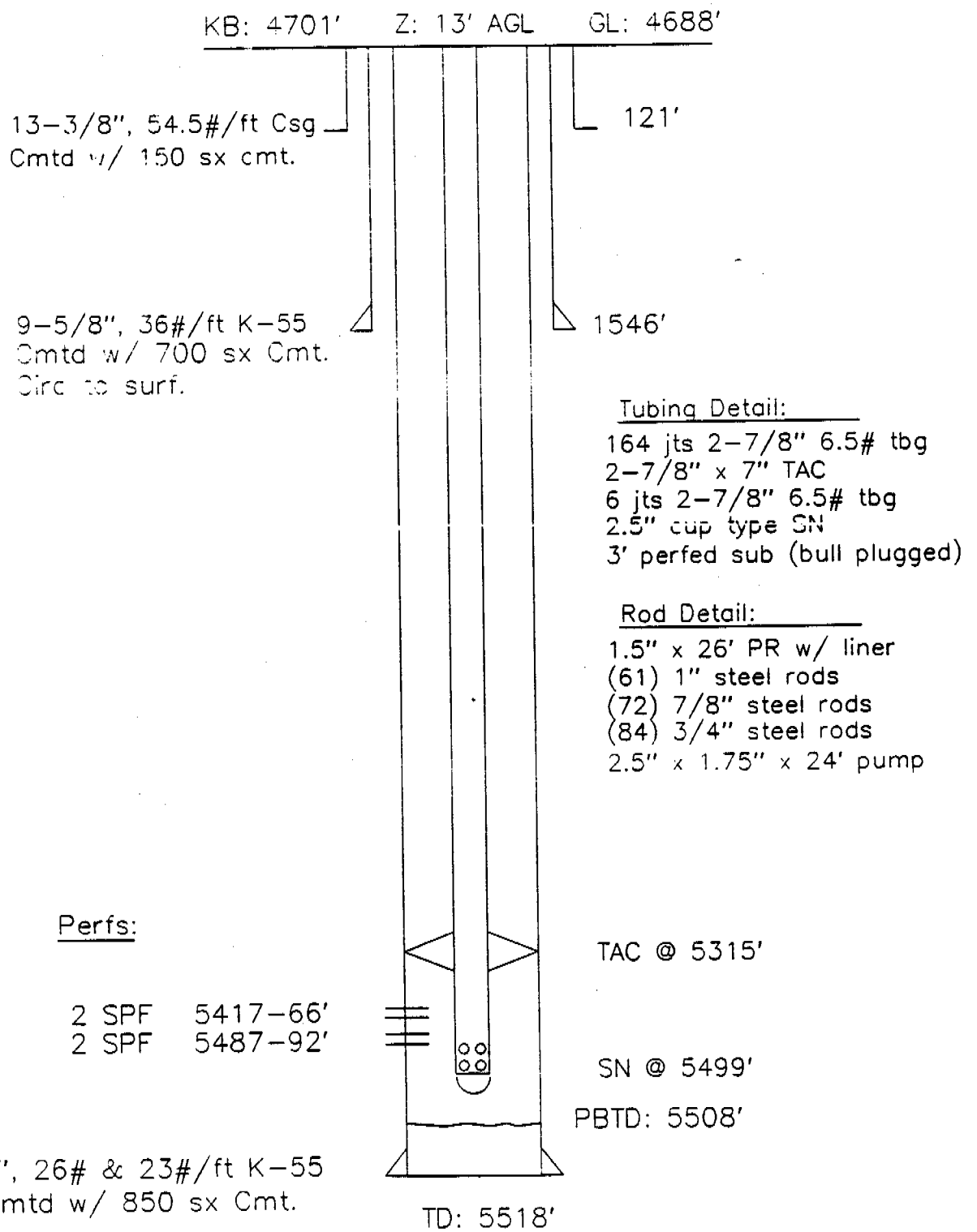
Exhibit 2CU

RU #13-34

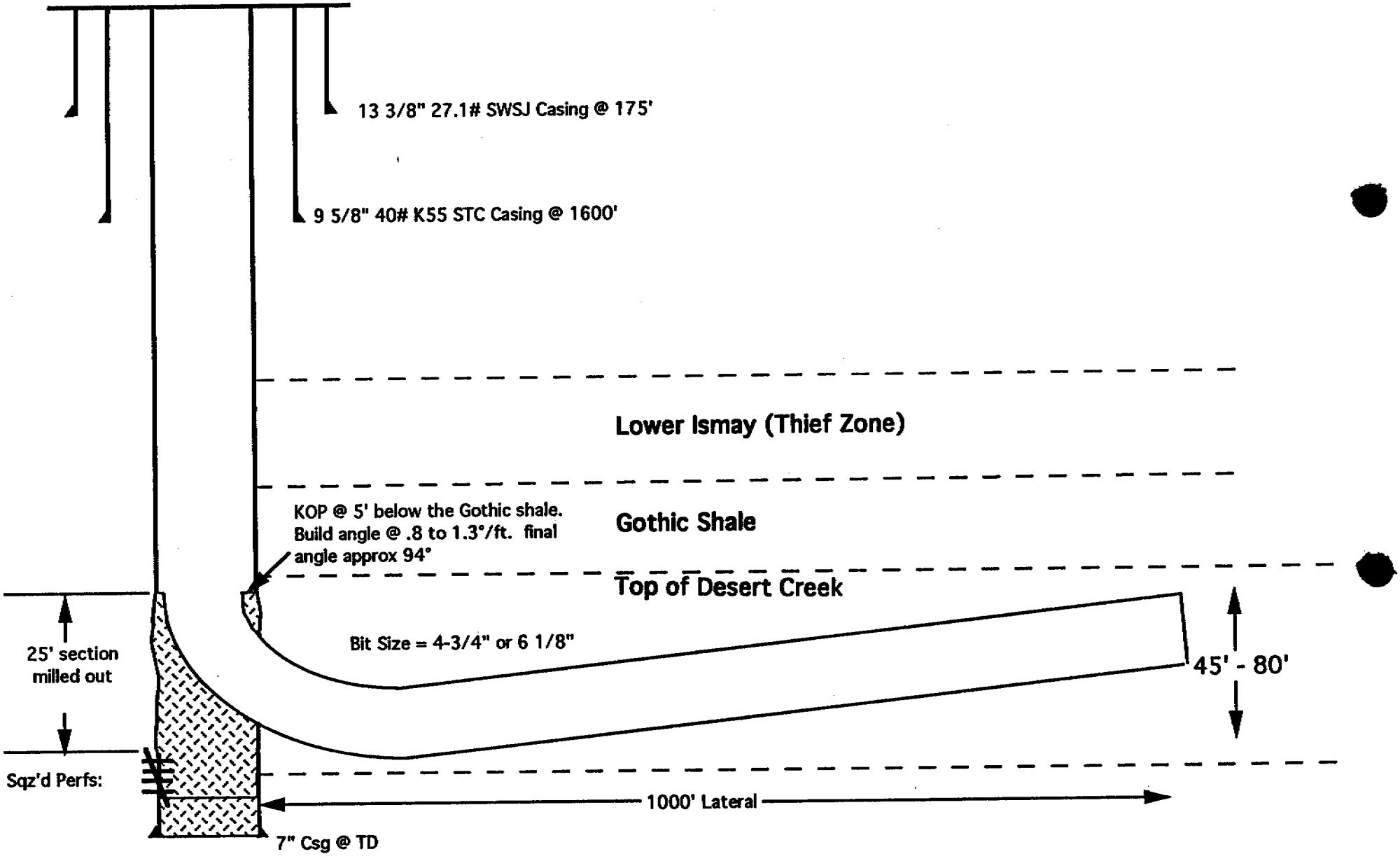
Rutherford Unit 13-34

PRODUCER
7-27-93
TVE

Present Setting



PROPOSED GENERIC HORIZONTAL SIDETRACK RE-ENTRY RATHERFORD UNIT



WORKSHEET
APPLICATION FOR PERMIT TO DRILL

APD RECEIVED: 05/05/95

API NO. ASSIGNED: 43-037-31130

WELL NAME: RATHERFORD 13-34 (RE-ENTRY)
OPERATOR: MOBIL EXPL. & PROD US (N7370)

PROPOSED LOCATION:
SWSE 13 - T41S - R23E
SURFACE: 0660-FSL-1980-FEL
BOTTOM: 0707-FNL-0707-FWL
SAN JUAN COUNTY
GREATER ANETH FIELD (365)

LEASE TYPE: IND
LEASE NUMBER: 14-20-603-247A

PROPOSED PRODUCING FORMATION: DSCR

INSPECT LOCATION BY: / /		
TECH REVIEW	Initials	Date
Engineering		
Geology		
Surface		

RECEIVED AND/OR REVIEWED:

Y Plat
Y Bond: Federal[✓] State[] Fee[]
(Number _____)
N Potash (Y/N)
N Oil shale (Y/N)
Y Water permit
(Number _____)
N RDCC Review (Y/N)
(Date: _____)

LOCATION AND SITING:

___ R649-2-3. Unit: _____

✓ R649-3-2. General.

___ R649-3-3. Exception.

___ Drilling Unit.
Board Cause no: _____
Date: _____

COMMENTS: _____

STIPULATIONS: _____

State of Utah
DEPARTMENT OF NATURAL RESOURCES
DIVISION OF OIL, GAS AND MINING

Michael O. Leavitt
Governor

Ted Stewart
Executive Director

James W. Carter
Division Director

355 West North Temple
3 Triad Center, Suite 350
Salt Lake City, Utah 84180-1203
801-538-5340
801-359-3940 (Fax)
801-538-5319 (TDD)

May 5, 1995

Mobil Exploration & Producing U.S. Inc.
as Agent for Mobil Producing TX & NM Inc.
P.O. Box 633
Midland, Texas 79702

Re: Ratherford 13-34 Well, Surface Location: 660' FSL, 1980' FEL, SW SE, Sec. 13, T. 41 S., R. 23 E., Bottom Hole Location: 707' FNL, 707' FWL, San Juan County, Utah

Gentlemen:

Pursuant to the provisions and requirements of Utah Code Ann. 40-6-1 et seq., Utah Administrative Code R649-3-1 et seq., and the attached Conditions of Approval, approval to reenter and drill the referenced well is granted.

This approval shall expire one year from the above date unless substantial and continuous operation is underway, or a request for extension is made prior to the expiration date. The API identification number assigned to this well is 43-037-31130.

Sincerely,

R. J. Firth
Associate Director

ldc
Enclosures
cc: San Juan County Assessor
Bureau of Land Management, Moab District Office
WAPD

Operator: Mobil Explor. & Prod. U.S. Inc. as Agent for Mobil Prod. TX & NM Inc.

Well Name & Number: Ratherford #13-34

API Number: 43-037-31130

Lease: BIA 14-20-603-247A

Location: SW SE **Sec.** 13 **T.** 41 S., **R.** 23 E.

Conditions of Approval

1. General
   Compliance with the requirements of Utah Admin. R. 649-1 et seq., the Oil and Gas Conservation General Rules, and the applicable terms and provisions of the approved Application for Permit to Drill.

2. Notification Requirements
   Notify the Division within 24 hours following spudding the well or commencing drilling operations. Contact Jimmie Thompson at (801)538-5340.

   Notify the Division prior to commencing operations to plug and abandon the well. Contact Frank Matthews or Mike Hebertson at (801)538-5340.

3. Reporting Requirements
   All required reports, forms and submittals shall be promptly filed with the Division, including but not limited to the Entity Action Form (Form 6), Report of Water Encountered During Drilling (Form 7), Weekly Progress Reports for drilling and completion operations, and Sundry Notices and Reports on Wells requesting approval of change of plans or other operational actions.

4. In accordance with Utah Admin. R. 649-3-11, Directional Drilling, submittal of a complete angular deviation and directional survey report is required.

DIVISION OF OIL, GAS AND MINING

SPUDDING INFORMATION

Name of Company: MEPNA

Well Name: RATHERFORD 13-34 (RE-ENTRY)

Api No. 43-037-31130

Section 13 Township 41S Range 23E County SAN JUAN

Drilling Contractor BIG "A"

Rig # 25

SPUDDED: Date 5/6/95

Time 10:00 AM

How ROTARY

Drilling will commence

Reported by DAVID NEAL

Telephone # 1-801-651-3473

Date: 5/4/95 Signed: MKH

Form 3160-4
(July 1992)

UNITED STATES
DEPARTMENT OF THE INTERIOR
BUREAU OF LAND MANAGEMENT

SUBMIT IN DUPLICATE* (See other instructions on reverse side)

FORM APPROVED
OMB NO. 1004-0137
Expires: February 28, 1995

WELL COMPLETION OR RECOMPLETION REPORT AND LOG*

5. LEASE DESIGNATION AND SERIAL NO.: 14-20-603-247A

6. IF INDIAN, ALLOTTEE OR TRIBE NAME: NAVAJO TRIBAL

7. UNIT AGREEMENT NAME: RATHERFORD UNIT

8. FARM OR LEASE NAME, WELL NO.: RATHERFORD 13-34

9. API WELL NO.: 43-037-31130

10. FIELD AND POOL, OR WILDCAT: GREATER ANETH

11. SEC., T., R., M., OR BLOCK AND SURVEY OR AREA: SEC. 13, T41S, R23E

1a. TYPE OF WELL: OIL WELL [X] GAS WELL [ ] DRY [ ] Other

b. TYPE OF COMPLETION: NEW WELL [ ] WORK OVER [ ] DEEP-EN [ ] PLUG BACK [ ] DIFF. RESVR. [ ] Other SIDETRACK

2. NAME OF OPERATOR: Mobil Exploration & Producing U.S. Inc. as Agent for Mobil Producing TX & NM Inc.

3. ADDRESS AND TELEPHONE NO.: P.O. Box 633, Midland, TX 79702 (915) 688-2585

4. LOCATION OF WELL (*Report location clearly and in accordance with any State requirements)**
At surface: 660' FSL, 1980' FEL
At top prod. interval reported below
At total depth: ~~BHL 901' N, 801' W. FROM SURF.~~ 2781 FEL & 1561 FSL NW/SE

14. PERMIT NO.	DATE ISSUED	12. COUNTY OR PARISH	13. STATE
NA	NA	SAN JUAN	UT

15. DATE SPUDDED	16. DATE T.D. REACHED	17. DATE COMPL. (*Ready to prod.*)	18. ELEVATIONS (DF, RKB, RT, GR, ETC.)*	19. ELEV. CASINGHEAD
NA 5-6-95	5-19-95	5-27-95	GL - 4688	

20. TOTAL DEPTH, MD & TVD	21. PLUG, BACK T.D., MD & TVD	22. IF MULTIPLE COMPL., HOW MANY*	23. INTERVALS DRILLED BY	ROTARY TOOLS	CABLE TOOLS
TVD @ 5469 MD 6620	TMD @ 6620		→		

24. PRODUCING INTERVAL(S), OF THIS COMPLETION - TOP, BOTTOM, NAME (MD AND TVD)*: 5413-6620 DESERT CREEK

25. WAS DIRECTIONAL SURVEY MADE: YES

26. TYPE ELECTRIC AND OTHER LOGS RUN

27. WAS WELL CORED: NO

28. CASING RECORD (*Report all strings set in well*)

CASING SIZE/GRADE	WEIGHT, LB./FT.	DEPTH SET (MD)	HOLE SIZE	TOP OF CEMENT, CEMENTING RECORD	AMOUNT PULLED
13 3/8	54.5	121	NA	150 SX SURF	NONE
9 5/8	36	1546	NA	700 SX SURF	NONE
7	26 & 23	5518	NA	850 SX CACL TOC SURF	NONE

29. LINER RECORD

SIZE	TOP (MD)	BOTTOM (MD)	SACKS CEMENT*	SCREEN (MD)

30. TUBING RECORD

SIZE	DEPTH SET (MD)	PACKER SET (MD)
2 7/8		5284

31. PERFORATION RECORD (*Interval, size and number*): 5413-6620

32. ACID, SHOT, FRACTURE, CEMENT SQUEEZE, ETC.

DEPTH INTERVAL (MD)	AMOUNT AND KIND OF MATERIAL USED
5413-5438	CUT WINDOW
5278	SET CICR
5450-5200	SET CMT PLUG W/50X CL 'G' CM
5044	SPOT 100X CL G

33.* PRODUCTION

DATE FIRST PRODUCTION	PRODUCTION METHOD (*Flowing, gas lift, pumping - size and type of pump*)	WELL STATUS (*Producing or shut-in*)
		PRODUCING

DATE OF TEST	HOURS TESTED	CHOKE SIZE	PROD'N. FOR TEST PERIOD →	OIL - BBL.	GAS - MCF.	WATER - BBL.	GAS - OIL RATIO
6-13-95	24			157	37	379	236

FLOW. TUBING PRESS.	CASING PRESSURE	CALCULATED 24-HOUR RATE →	OIL - BBL.	GAS - MCF.	WATER - BBL.	OIL GRAVITY - API (CORR.)
55	55					

34. DISPOSITION OF GAS (*Sold, used for fuel, vented, etc.*)

TEST WITNESSED BY

35. LIST OF ATTACHMENTS

RECEIVED
JUN 26 1995
DIV. OF OIL, GAS & MINING

36. I hereby certify that the foregoing and attached information is complete and correct as determined from all available records

SIGNED Shirley Robertson TITLE ENV. & REG. TECHNICIAN DATE 6-20-95

*(See Instructions and Spaces for Additional Data on Reverse Side)

Title 18 U.S.C. Section 1001, makes it a crime for any person knowingly and willfully to make to any department or agency of the United States any false, fictitious or fraudulent statements or representations as to any matter within its jurisdiction.

MOBIL EXPLORATION & PRODUCING U.S. INC.
as Agent for MEPNA & Mobil Oil Corp.

RATHERFORD UNIT # 13-34
Sec. 13, T41S, R23E
660' FSL, 1980' FEL
901'N. 801' W. From Surface Location

Scale 1" = 1,000'

Inrun Survey
MOBIL OIL COMPANY

Well number : RATHERFORD 13-34 Date : 14-MAY-95

Measured Depth	Vertical Depth	Vert. Section	Inc Deg	Azimuth Deg	Coordinates Latitude	Coordinates Departure	D-leg /100ft
0.0	0.00	0.0	0.00	0.00	0.00	0.00	0.00
100.0	100.00	-0.7	0.92	101.91	-0.17	0.79	0.92
200.0	199.98	-2.0	0.94	98.60	-0.43	2.39	0.09
300.0	299.97	-3.3	0.92	104.40	-0.72	3.98	0.13
400.0	399.96	-4.5	0.64	98.68	-1.00	5.31	0.29
500.0	499.95	-5.2	0.63	73.68	-0.93	6.39	0.27
600.0	599.95	-5.4	0.35	41.22	-0.55	7.12	0.38
700.0	699.95	4.8	0.66	315.97	0.10	6.92	0.72
800.0	799.94	-3.5	0.83	312.50	1.00	5.98	0.18
900.0	899.91	-1.4	1.65	301.03	2.23	4.22	0.85
1000.0	999.87	1.5	1.74	303.57	3.81	1.72	0.12
1100.0	1099.81	4.7	2.08	297.53	5.49	-1.16	0.39
1200.0	1199.74	8.3	2.33	291.54	7.08	-4.66	0.34
1300.0	1299.65	12.2	2.60	291.82	8.66	-8.65	0.27
1400.0	1399.54	16.5	2.60	297.23	10.54	-12.78	0.25
1500.0	1499.44	20.7	2.55	295.24	12.53	-16.80	0.10
1600.0	1599.36	24.7	2.23	300.24	14.46	-20.50	0.38
1700.0	1699.28	28.4	2.22	295.23	16.27	-23.93	0.19
1800.0	1799.22	31.8	1.85	296.09	17.80	-27.13	0.37
1900.0	1899.17	34.6	1.60	294.98	19.10	-29.85	0.25
2000.0	1999.14	37.0	1.36	292.85	20.15	-32.21	0.25
2100.0	2099.11	39.2	1.27	294.68	21.07	-34.31	0.10
2200.0	2199.09	41.0	0.96	295.93	21.89	-36.07	0.31
2300.0	2299.07	42.8	1.25	336.32	23.26	-37.26	0.81
2400.0	2399.04	44.9	1.84	2.65	25.86	-37.63	0.91
2500.0	2498.98	47.0	2.13	10.19	29.30	-37.02	0.39
2600.0	2598.90	49.3	2.44	9.68	[illegible]	[illegible]6.54	0.31
2700.0	2698.81	51.8	2.46	9.23	[illegible]	-35.84	0.03
2800.0	2798.73	54.0	2.12	15.13	[illegible]	-35.01	0.41
2900.0	2898.68	55.5	1.53	20.21	[illegible].38	-34.06	0.61
3000.0	2998.65	56.1	1.12	40.11	46.38	-32.97	0.61
3100.0	3098.63	56.3	1.17	37.70	47.94	-31.72	0.07
3200.0	3198.61	56.2	1.23	60.61	49.27	-30.16	0.48
3300.0	3298.59	55.3	1.22	75.65	50.06	-28.19	0.32
3400.0	3398.56	54.1	1.31	83.83	50.45	-26.02	0.20
3500.0	3498.54	52.6	1.04	98.79	50.43	-23.99	0.41
3600.0	3598.53	51.4	0.72	100.04	50.19	-22.48	0.32
3700.0	3698.52	50.4	0.57	105.16	49.95	-21.38	0.16
3800.0	3798.52	49.6	0.45	145.92	49.49	-20.68	0.37

Inrun Survey
MOBIL OIL COMPANY

Well number : RATHERFORD 13-34 Date : 14-MAY-95

Measured Depth	Vertical Depth	Vert. Section	Inc Deg	Azimuth Deg	Coordinates Latitude	Coordinates Departure	D-leg /100ft
3900.0	3898.51	48.8	0.55	147.21	48.76	-20.20	0.10
4000.0	3998.51	47.9	0.43	131.63	48.11	-19.66	0.18
4100.0	4098.51	47.4	0.34	192.59	47.57	-19.44	0.40
4200.0	4198.51	47.1	0.37	195.78	46.97	-19.59	0.03
4300.0	4298.50	46.8	0.78	218.69	46.13	-20.11	0.46
4400.0	4398.49	46.6	0.51	208.84	45.21	-20.75	0.29
4500.0	4498.49	46.4	0.51	210.85	44.44	-21.19	0.02
4600.0	4598.48	46.3	0.68	226.44	43.64	-21.85	0.23
4700.0	4698.48	46.2	0.63	211.44	42.77	-22.57	0.16
4800.0	4798.47	46.1	0.62	225.99	41.92	-23.24	0.16
4900.0	4898.47	46.1	0.41	235.12	41.34	-23.92	0.22
5000.0	4998.46	46.0	0.42	189.30	40.77	-24.28	0.32
5100.0	5098.46	45.9	0.28	241.64	[illegible]	-24.55	0.33
5200.0	5198.46	45.8	0.28	180.7[illegible]	[illegible]	-24.77	0.28
5300.0	5298.46	45.4	0.48	205.2[illegible]	[illegible].51	-24.96	0.26
5385.0	5383.45	45.2	0.64	214.06	38.60	-25.38	0.21

At Bottom Hole Location: Measured Depth = 5385.0 Horiz. Displ. = 46.196 Closure Dir. = 326.678

BECFIELD SURVEY CALCULATION PROGRAM

OPERATOR: Mobil Exploration and Production
WELL: Ratherford Unit No. 13-34
JOB NO: 253070
FIELD: Greater Aneth
LOCATION: San Juan County, Utah

DATE: 05/14
TIME: 19:17
Information provided by:

DIP1	-0.74 °	-1.30 °/100'	
top of DC 1C	5,448.0		
@ VS	0.0		
DIP2	-0.74 °	-1.30 °/100'	
20' below top	5,468.0		
@ VS	0.0		

TERM I1 = 94.00
TERM I2 = 94.00

PROPOSED DIRECTION: 315.00 °(TRUE)

NO.	MD	INC.	AZ	DLS/ 100	inc chg °/100 ft	5 survey moving avg delta inc	BUR REQ'D	TVD	20' below TOP 1C	above(+) below(-)	SECT	right(+) left(-)	N-S	E-W
tie in	5,385	0.6	214.6	0.21			65.4	5,383.45	5,469	85.1	45.24	9.3	36.60	-25.38
1	5,417	3.1	293.6	9.51	7.69		100.2	5,415.4	5,469	53.2	46.0	9	0.0	0.0
2	5,420	5.9	313.5	105.52	93.33	93.3	100.6	5,418.4	5,469	50.2	46.2	9	38.9	-26.6
3	5,425	12.3	313.5	128.00	128.00	110.7	97.6	5,423.4	5,469	45.3	47.0	9	39.5	-27.0
4	5,430	19.8	310.3	150.98	150.00	123.8	91.4	5,428.2	5,469	40.5	48.4	9	40.4	-28.1
5	5,435	26.8	301.7	155.31	140.00	127.8	85.3	5,432.8	5,469	35.9	50.4	8	41.5	-29.7
6	5,440	33.8	286.5	206.73	140.00	130.3	77.9	5,437.1	5,469	31.6	52.7	7	42.5	-32.0
7	5,445	41.1	293.8	170.66	146.00	140.8	68.2	5,441.0	5,469	27.7	55.4	6	43.6	-34.8
8	5,450	48.1	302.6	186.49	140.00	143.2	57.8	5,444.6	5,469	24.2	58.8	5	45.3	-37.9
bit	5,473	80.3	310.0	142.83	140.00		3.5	5,454.5	5,469	14.5	79.0	2	57.5	-54.2

BECFIELD SURVEY CALCULATION PROGRAM

OPERATOR: Mobil Exploration and Production
WELL: Ratherford Unit No. 13-34
JOB NO: 253070
FIELD: Greater Aneth
LOCATION: San Juan County, Utah

DATE: 05/16
TIME: 05:46
Information provided by:

DIP1	-0.74 °	-1.30 '/100'	
top of DC 1C	5,448.0		
@ VS	46.0		
DIP2	-0.74 °	-1.30 '/100'	
top of DC 1C	5,448.0		
@ VS	46.0		

TERM I1 = 94.00
TERM I2 = 94.00

PROPOSED DIRECTION: 315.00 °(TRUE)

NO.	MD	INC.	AZ	TVD	TOP DC 1C	above(+) below(-)	SECT	right(+) left(-)	N-S	E-W	DLS/ 100
8	5,450	46.1	302.6	5,444.6	5,448.2	3.6	58.8	5	45.3	-37.9	186.49
9	5,455	56.0	307.7	5,447.7	5,448.2	0.5	62.7	5	47.5	-41.1	177.21
10	5,460	63.5	306.7	5,450.2	5,448.3	-1.9	67.0	4	50.2	-44.5	150.99
11	5,465	71.7	309.3	5,452.1	5,448.3	-3.8	71.6	4	53.1	-48.1	164.37
12	5,470	77.7	309.8	5,453.4	5,448.4	-5.0	76.4	3	56.2	-51.8	120.39
13	5,475	81.1	310.2	5,454.3	5,448.5	-5.9	81.3	3	59.3	-55.6	68.45
14	5,480	81.2	311.0	5,455.1	5,448.5	-6.6	86.2	2	62.6	-59.3	15.94
15	5,485	80.6	311.4	5,455.9	5,448.6	-7.3	91.1	2	65.8	-63.0	14.37
16	5,490	79.9	311.7	5,456.7	5,448.6	-8.1	96.0	2	69.1	-66.7	15.20
17	5,495	79.3	311.9	5,457.6	5,448.7	-8.9	100.9	1	72.4	-70.4	12.63
18	5,500	78.6	312.3	5,458.6	5,448.8	-9.8	105.8	1	75.6	-74.0	16.05
19	5,505	78.1	312.9	5,459.6	5,448.8	-10.8	110.7	1	79.0	-77.6	15.43
20	5,510	78.0	313.5	5,460.6	5,448.9	-11.7	115.6	1	82.3	-81.2	11.91
21	5,515	78.5	314.2	5,461.7	5,449.0	-12.7	120.5	1	85.7	-84.7	16.97
22	5,520	79.1	315.0	5,462.6	5,449.0	-13.6	125.4	1	89.1	-88.2	19.76
23	5,525	79.9	315.8	5,463.5	5,449.1	-14.5	130.3	1	92.6	-91.7	22.44
24	5,530	80.7	316.6	5,464.4	5,449.2	-15.2	135.3	1	96.2	-95.1	22.47
25	5,535	81.6	317.5	5,465.2	5,449.2	-15.9	140.2	1	99.8	-98.5	25.30
26	5,540	82.6	318.1	5,465.9	5,449.3	-16.6	145.1	1	103.5	-101.8	23.27
27	5,550	85.4	319.4	5,466.9	5,449.4	-17.5	155.1	2	111.0	-108.3	30.84
28	5,560	89.2	320.5	5,467.4	5,449.5	-17.8	165.0	3	118.8	-114.8	39.56
29	5,570	93.0	321.5	5,467.2	5,449.7	-17.5	175.0	4	126.4	-121.1	39.29
30	5,580	95.8	323.1	5,466.4	5,449.8	-16.6	184.8	5	134.3	-127.1	32.22
31	5,590	96.5	323.6	5,465.3	5,449.9	-15.4	194.7	6	142.2	-133.1	8.59
32	5,600	95.3	320.2	5,464.3	5,450.1	-14.2	204.6	6	150.1	-139.2	35.89
33	5,610	94.4	318.3	5,463.5	5,450.2	-13.3	214.5	8	157.6	-145.7	20.96
34	5,620	94.0	318.3	5,462.7	5,450.3	-12.4	224.4	9	165.1	-152.4	4.00
35	5,630	93.7	318.6	5,462.1	5,450.4	-11.6	234.4	10	172.5	-159.0	4.24
36	5,640	93.8	319.3	5,461.4	5,450.6	-10.8	244.4	10	180.1	-165.5	7.06
37	5,650	93.9	319.9	5,460.7	5,450.7	-10.0	254.3	11	187.6	-172.0	6.07
38	5,660	93.6	319.9	5,460.1	5,450.8	-9.2	264.2	12	195.3	-178.4	3.00
39	5,670	93.1	319.5	5,459.5	5,451.0	-8.5	274.2	13	202.9	-184.9	6.40
40	5,680	92.9	319.4	5,459.0	5,451.1	-7.9	284.2	14	210.5	-191.4	2.24
41	5,690	92.7	319.0	5,458.5	5,451.2	-7.3	294.1	14	218.0	-197.9	4.47
42	5,700	93.1	317.8	5,458.0	5,451.3	-6.6	304.1	15	225.5	-204.5	12.63
43	5,710	94.1	316.8	5,457.3	5,451.5	-5.9	314.1	15	232.8	-211.3	14.13
44	5,720	94.4	316.4	5,456.6	5,451.6	-5.0	324.0	16	240.1	-218.1	4.99
45	5,730	94.4	316.2	5,455.8	5,451.7	-4.1	334.0	16	247.3	-225.0	1.99
46	5,740	93.5	316.2	5,455.1	5,451.9	-3.3	344.0	16	254.5	-231.9	9.00
47	5,750	92.2	315.9	5,454.7	5,452.0	-2.7	354.0	16	261.7	-238.9	13.34
48	5,760	91.9	315.7	5,454.3	5,452.1	-2.2	363.9	16	268.9	-245.8	3.60
49	5,770	91.6	315.3	5,454.0	5,452.3	-1.7	373.9	16	276.0	-252.8	5.00
50	5,780	91.0	315.1	5,453.8	5,452.4	-1.4	383.8	16	283.1	-259.9	6.32
51	5,790	90.1	315.2	5,453.7	5,452.5	-1.2	393.9	16	290.2	-266.9	9.06
52	5,800	88.5	315.6	5,453.8	5,452.6	-1.1	403.9	16	297.3	-274.0	16.49
53	5,810	86.8	316.2	5,454.2	5,452.8	-1.4	413.9	17	304.5	-280.9	18.03
54	5,820	87.7	316.6	5,454.7	5,452.9	-1.8	423.9	17	311.7	-287.8	9.85
55	5,830	89.2	317.0	5,454.9	5,453.0	-1.9	433.9	17	319.0	-294.6	15.52
56	5,840	91.0	317.8	5,454.9	5,453.2	-1.8	443.9	18	326.3	-301.4	19.70
bit	5,880	95.7	316.0	5,452.6	5,453.7	1.1	483.8	20	356.0	-328.2	11.76

BECFIELD SURVEY CALCULATION PROGRAM

OPERATOR: Mobil Exploration and Production
WELL: Ratherford Unit No. 13-34
JOB NO: 253070
FIELD: Greater Aneth
LOCATION: San Juan County, Utah

DATE. 05/16
TIME: 15:27
information provided by:

DIP1	-0.74 °	-1.30 '/100'	
top of DC 1C	5,448.0		
@ VS	46.0		
DIP2	-0.52 °	-0.90 '/100'	
top of DC 1B	5,436.0		
@ VS	46.0		

TERM I1 = 94.00
TERM I2 = 94.00

PROPOSED DIRECTION: 315.00 °(TRUE)

NO.	MD	INC.	AZ	TVD	**TOP DC 1B**	above(+) below(-)	SECT	right(+) left(-)	N-S	E-W	DLS/ 100
53	5,810	86.8	316.2	5,454.2	5,439.3	-14.9	413.9	17	304.5	-280.9	18.03
54	5,820	87.7	316.6	5,454.7	5,439.4	-15.3	423.9	17	311.7	-287.8	9.85
55	5,830	89.2	317.0	5,454.9	5,439.5	-15.4	433.9	17	319.0	-294.6	15.52
56	5,840	91.0	317.8	5,454.9	5,439.6	-15.3	443.9	18	326.3	-301.4	19.70
57	5,850	92.7	319.3	5,454.6	5,439.7	-14.9	453.9	18	333.8	-308.0	22.67
58	5,860	93.3	321.0	5,454.1	5,439.8	-14.3	463.8	19	341.5	-314.4	18.01
59	5,870	93.5	322.2	5,453.5	5,439.9	-13.6	473.7	20	349.3	-320.6	12.14
60	5,880	93.7	323.4	5,452.9	5,439.9	-12.9	483.6	22	357.3	-326.7	12.14
61	5,890	92.2	322.8	5,452.3	5,440.0	-12.3	493.5	23	365.3	-332.7	16.15
62	5,900	91.3	323.7	5,452.0	5,440.1	-11.9	503.4	24	373.3	-338.6	12.72
63	5,910	90.6	324.9	5,451.9	5,440.2	-11.7	513.3	26	381.4	-344.5	13.89
64	5,920	89.9	326.3	5,451.8	5,440.3	-11.5	523.1	28	389.6	-350.1	15.65
65	5,930	89.7	327.6	5,451.9	5,440.4	-11.5	532.9	30	398.0	-355.6	13.15
66	5,940	90.2	328.4	5,451.9	5,440.5	-11.4	542.6	32	406.5	-360.9	9.43
67	5,950	90.6	329.1	5,451.8	5,440.6	-11.2	552.3	35	415.0	-366.1	8.06
68	5,960	91.1	329.7	5,451.7	5,440.7	-11.0	562.0	37	423.7	-371.2	7.81
69	5,970	91.4	330.8	5,451.4	5,440.7	-10.7	571.7	40	432.3	-376.1	11.40
70	5,980	91.9	331.4	5,451.2	5,440.8	-10.3	581.3	43	441.1	-380.9	7.81
71	5,990	92.2	331.5	5,450.8	5,440.9	-9.9	590.9	45	449.9	-385.7	3.16
72	6,000	92.7	331.1	5,450.4	5,441.0	-9.4	600.4	48	458.6	-390.5	6.40
BIT	6,053	92.7	327.7	5,447.9	5,441.5	-6.4	651.7	61	504.2	-417.5	6.40

BECFIELD SURVEY CALCULATION PROGRAM

DATE: 05/17
TIME: 04:24
Information provided by:

OPERATOR: Mobil Exploration and Production
WELL: Ratherford Unit No. 13-34
JOB NO: 253070
FIELD: Greater Aneth
LOCATION: San Juan County, Utah

DIP1	-0.52 °	-0.90 °/100'
top of DC 1B	5,436.0	
@ VS	46.0	
DIP2	-0.84 °	-1.47 °/100'
top of DC 1A	5,414.0	
@ VS	46.0	

TERM I1 = 94.00
TERM I2 = 94.00

PROPOSED DIRECTION: 315.00 °(TRUE)

NO.	MD	INC.	AZ	TVD	TOP DC 1A	above(+) below(-)	SECT	right(+) left(-)	N-S	E-W	DLS/ 100	Dir req to Target
56	5,840	91.0	317.8	5,454.9	5,419.8	-35.1	443.9	18	326.3	-301.4	19.70	313.3
57	5,850	92.7	319.3	5,454.6	5,420.0	-34.6	453.9	18	333.8	-308.0	22.67	313.2
58	5,860	93.3	321.0	5,454.1	5,420.1	-34.0	463.8	19	341.5	-314.4	18.01	313.1
59	5,870	93.5	322.2	5,453.5	5,420.3	-33.2	473.7	20	349.3	-320.6	12.14	313.0
60	5,880	93.7	323.4	5,452.9	5,420.4	-32.4	483.6	22	357.3	-326.7	12.14	312.8
61	5,890	92.2	322.8	5,452.3	5,420.6	-31.8	493.5	23	365.3	-332.7	16.15	312.6
62	5,900	91.3	323.7	5,452.0	5,420.7	-31.3	503.4	24	373.3	-338.6	12.72	312.4
63	5,910	90.6	324.9	5,451.9	5,420.9	-31.0	513.3	26	381.4	-344.5	13.69	312.2
64	5,920	89.9	326.3	5,451.8	5,421.0	-30.8	523.1	28	389.6	-350.1	15.65	311.9
65	5,930	89.7	327.6	5,451.9	5,421.1	-30.7	532.9	30	398.0	-355.6	13.15	311.7
66	5,940	90.2	328.4	5,451.9	5,421.3	-30.6	542.6	32	406.5	-360.9	9.43	311.3
67	5,950	90.6	329.1	5,451.8	5,421.4	-30.4	552.3	35	415.0	-366.1	8.06	311.0
68	5,960	91.1	329.7	5,451.7	5,421.6	-30.1	562.0	37	423.7	-371.2	7.81	310.6
69	5,970	91.4	330.8	5,451.4	5,421.7	-29.7	571.7	40	432.3	-376.1	11.40	310.2
70	5,980	91.9	331.4	5,451.2	5,421.8	-29.3	581.3	43	441.1	-380.9	7.81	309.8
71	5,990	92.2	331.5	5,450.8	5,422.0	-28.8	590.9	45	449.9	-385.7	3.16	309.3
72	6,000	92.7	331.1	5,450.4	5,422.1	-28.2	600.4	48	458.6	-390.5	6.40	308.8
73	6,010	92.8	330.4	5,449.9	5,422.3	-27.6	610.1	51	467.3	-395.4	7.06	308.3
74	6,020	92.6	329.8	5,449.4	5,422.4	-27.0	619.7	53	476.0	-400.4	6.32	307.9
75	6,030	92.6	329.4	5,449.0	5,422.6	-26.4	629.4	56	484.6	-405.4	4.00	307.3
76	6,040	92.7	328.4	5,448.5	5,422.7	-25.8	639.1	58	493.2	-410.6	10.04	306.8
77	6,050	92.6	327.7	5,448.0	5,422.8	-25.2	648.8	61	501.6	-415.9	7.06	306.3
78	6,060	92.3	327.2	5,447.6	5,423.0	-24.6	658.5	63	510.1	-421.3	5.83	305.8
79	6,070	91.9	326.5	5,447.2	5,423.1	-24.1	668.3	65	518.4	-426.7	8.06	305.3
80	6,080	91.7	326.9	5,446.9	5,423.3	-23.7	678.1	67	526.7	-432.3	6.32	304.7
81	6,090	92.0	325.3	5,446.6	5,423.4	-23.2	688.0	69	535.0	-437.9	6.71	304.1
82	6,100	92.2	325.2	5,446.2	5,423.6	-22.7	697.8	70	543.2	-443.6	2.24	303.6
83	6,110	94.5	325.0	5,445.7	5,423.7	-22.0	707.6	72	551.4	-449.3	23.09	303.0
84	6,120	97.1	324.7	5,444.8	5,423.8	-20.8	717.4	74	559.5	-455.1	28.17	302.3
85	6,130	97.9	325.1	5,443.3	5,424.0	-19.4	727.2	76	567.6	-460.8	8.93	301.7
86	6,140	97.6	325.3	5,442.0	5,424.1	-17.9	736.9	77	575.8	-466.4	3.60	301.0
87	6,150	96.8	325.3	5,440.7	5,424.3	-16.5	746.7	79	583.9	-472.1	8.00	300.2
88	6,160	96.5	325.4	5,439.6	5,424.4	-15.2	756.5	81	592.1	-477.7	3.16	299.4
89	6,170	96.2	325.4	5,438.5	5,424.6	-13.9	766.2	83	600.3	-483.4	3.00	298.5
90	6,180	94.9	325.0	5,437.5	5,424.7	-12.8	776.0	84	608.4	-489.0	13.60	297.6
91	6,190	93.3	324.3	5,436.8	5,424.8	-11.9	785.9	86	616.6	-494.8	17.46	296.7
92	6,200	91.7	323.8	5,436.4	5,425.0	-11.4	795.7	88	624.7	-500.7	16.76	295.7
93	6,210	90.4	322.9	5,436.2	5,425.1	-11.0	805.6	89	632.7	-506.6	15.81	294.7
94	6,220	89.8	322.3	5,436.2	5,425.3	-10.9	815.5	90	640.6	-512.7	8.49	293.6
95	6,230	90.7	322.3	5,436.1	5,425.4	-10.7	825.5	92	648.5	-518.8	9.00	292.4
96	6,240	92.1	322.5	5,435.9	5,425.6	-10.3	835.4	93	656.5	-524.9	14.14	291.2
BIT	6,290	91.0	320.0	5,434.5	5,426.3	-8.2	885.1	98	695.4	-556.2	5.46	283.5

BECFIELD SURVEY CALCULATION PROGRAM

OPERATOR: Mobil Exploration and Production
WELL: Ratherford Unit No. 13-34
JOB NO: 253070
FIELD: Greater Aneth
LOCATION: San Juan County, Utah

DATE: 05/18
TIME: 05:48
Information provided by:

DIP1	-0.52 °	-0.90 '/100'
top of DC 1B	5,436.0	
@ VS	46.0	
DIP2	-0.84 °	-1.47 '/100'
top of DC 1A	5,414.0	
@ VS	46.0	

TERM I1 = 94.00
TERM I2 = 94.00

PROPOSED DIRECTION: 315.00 °(TRUE)

NO.	MD	INC.	AZ	TVD	TOP DC 1A	above(+) below(-)	SECT	right(+) left(-)	N-S	E-W	DLS/ 100
89	6,170	96.2	325.4	5,436.5	5,424.6	-13.9	766.2	83	600.3	-483.4	3.00
90	6,180	94.9	325.0	5,437.5	5,424.7	-12.8	776.0	84	608.4	-489.0	13.60
91	6,190	93.3	324.3	5,436.8	5,424.8	-11.9	785.9	86	616.6	-494.8	17.46
92	6,200	91.7	323.8	5,436.4	5,425.0	-11.4	795.7	88	624.7	-500.7	16.76
93	6,210	90.4	322.9	5,436.2	5,425.1	-11.0	805.6	89	632.7	-506.6	15.81
94	6,220	89.8	322.3	5,436.2	5,425.3	-10.9	815.5	90	640.6	-512.7	8.49
95	6,230	90.7	322.3	5,436.1	5,425.4	-10.7	825.5	92	648.5	-518.8	9.00
96	6,240	92.1	322.5	5,435.9	5,425.6	-10.3	835.4	93	656.5	-524.9	14.14
97	6,250	92.7	322.5	5,435.4	5,425.7	-9.7	845.3	94	664.4	-531.0	6.00
98	6,260	92.5	323.0	5,435.0	5,425.9	-9.1	855.2	96	672.3	-537.1	5.38
99	6,270	91.6	322.9	5,434.6	5,426.0	-8.6	865.1	97	680.3	-543.1	9.06
100	6,280	90.0	324.8	5,434.5	5,426.2	-8.3	875.0	99	688.4	-549.0	24.84
101	6,290	89.0	323.4	5,434.6	5,426.3	-8.3	884.8	100	696.5	-554.8	17.20
102	6,300	88.8	322.4	5,434.8	5,426.4	-8.3	894.7	102	704.5	-560.9	10.20
103	6,310	88.5	321.1	5,435.0	5,426.6	-8.4	904.7	103	712.3	-567.1	13.34
104	6,320	88.1	319.9	5,435.3	5,426.7	-8.6	914.6	104	720.0	-573.4	12.64
105	6,330	88.4	318.0	5,435.6	5,426.9	-8.7	924.6	104	727.6	-580.0	19.23
106	6,340	90.5	315.5	5,435.7	5,427.0	-8.7	934.6	105	734.9	-586.8	32.65
BIT	6,362	90.5	308.3	5,435.5	5,427.4	-8.2	956.5	103	749.5	-603.2	32.65

BECFIELD SURVEY CALCULATION PROGRAM

OPERATOR: Mobil Exploration and Production
WELL: Ratherford Unit No. 13-34
JOB NO: 253070
FIELD: Greater Aneth
LOCATION: San Juan County, Utah

DATE: 05/19
TIME: 02:14
Information provided by:

DIP1	-0.52 °	-0.90 '/100'
top of DC 1B	5,436.0	
@ VS	46.0	
DIP2	-0.64 °	-1.47 '/100'
top of DC 1A	5,414.0	
@ VS	46.0	

TERM I1 = 94.00
TERM I2 = 94.00

PROPOSED DIRECTION: 315.00 °(TRUE)

NO	MD	INC.	AZ	TVD	TOP DC 1A	above(+) below(-)	SECT	right(+) left(-)	N-S	E-W	[illegible]
106	6,340	90.5	315.5	5,435.7	5,427.0	-8.7	934.6	105	734.9	-586.6	[illegible]
107	6,350	92.2	313.7	5,435.5	5,427.2	-8.3	944.6	105	741.9	-594.0	[illegible]
108	6,360	93.5	311.6	5,435.0	5,427.3	-7.7	954.6	104	748.6	-601.3	[illegible]
109	6,370	94.0	310.8	5,434.3	5,427.5	-6.9	964.5	104	755.2	-608.6	[illegible]
110	6,380	94.4	310.5	5,433.6	5,427.6	-6.0	974.5	103	761.7	-616.4	[illegible]
111	6,390	94.0	310.2	5,432.9	5,427.8	-5.1	984.4	102	768.2	-624.0	[illegible]
112	6,400	91.1	310.1	5,432.4	5,427.9	-4.5	994.3	101	774.6	-631.6	[illegible]
113	6,410	88.7	309.9	5,432.4	5,428.1	-4.4	1,004.3	100	781.0	-639.3	[illegible]
114	6,420	87.7	309.5	5,432.7	5,428.2	-4.5	1,014.3	99	787.4	-647.0	[illegible]
115	6,430	87.0	309.4	5,433.2	5,428.3	-4.9	1,024.2	98	793.8	-654.7	[illegible]
116	6,440	86.4	309.4	5,433.8	5,428.5	-5.3	1,034.1	97	800.1	-662.4	[illegible]
117	6,450	85.8	309.0	5,434.5	5,428.6	-5.8	1,044.1	96	806.4	-670.1	[illegible]
118	6,460	85.2	309.0	5,435.2	5,428.8	-6.5	1,054.0	95	812.7	-677.9	[illegible]
119	6,470	84.3	309.0	5,436.2	5,428.9	-7.2	1,063.9	94	818.9	-685.6	[illegible]
120	6,480	83.7	309.0	5,437.2	5,429.1	-8.1	1,073.8	93	825.2	-693.3	[illegible]
121	6,490	83.3	309.0	5,438.3	5,429.2	-9.1	1,083.7	92	831.5	-701.1	[illegible]
122	6,500	82.4	309.2	5,439.6	5,429.4	-10.2	1,093.5	91	837.7	-708.8	[illegible]
123	6,510	81.8	309.1	5,441.0	5,429.5	-11.5	1,103.4	90	844.0	-716.4	[illegible]
124	6,520	81.4	308.9	5,442.4	5,429.7	-12.8	1,113.2	89	850.2	-724.1	[illegible]
125	6,530	80.5	308.5	5,444.0	5,429.8	-14.2	1,123.0	88	856.4	-731.8	[illegible]
126	6,540	79.8	308.1	5,445.7	5,429.9	-15.8	1,132.8	87	862.5	-739.6	[illegible]
127	6,550	78.9	308.1	5,447.6	5,430.1	-17.5	1,142.6	86	868.5	-747.3	[illegible]
128	6,560	78.1	307.6	5,449.5	5,430.2	-19.3	1,152.3	85	874.6	-755.0	[illegible]
129	6,570	77.5	307.5	5,451.7	5,430.4	-21.3	1,162.0	83	880.5	-762.8	[illegible]
130	6,580	76.5	307.4	5,453.9	5,430.5	-23.4	1,171.6	82	886.4	-770.5	[illegible]
BIT	6,620	72.5	307.0	5,464.6	5,431.1	-33.5	1,209.8	77	909.7	-801.2	[illegible]

Form 3160-5
(June 1990)

UNITED STATES
DEPARTMENT OF THE INTERIOR
BUREAU OF LAND MANAGEMENT

RECEIVED
JUN 26 1995
DIV. OF OIL, GAS & MINING

FORM APPROVED
Budget Bureau No. 1004-0135
Expires: March 31, 1993

SUNDRY NOTICES AND REPORTS ON WELLS

Do not use this form for proposals to drill or to deepen or reentry to a different reservoir.
Use "APPLICATION FOR PERMIT - " for such proposals

SUBMIT IN TRIPLICATE

5. Lease Designation and Serial No.: 14-20-603-247A
6. If Indian, Allottee or Tribe Name: NAVAJO TRIBAL
7. If Unit or CA, Agreement Designation: RATHERFORD UNIT

1. Type of Well: [X] Oil Well [ ] Gas Well [ ] Other SIDETRACK
2. Name of Operator: Mobil Exploration & Producing U.S. Inc. as Agent for Mobil Producing TX & NM Inc.
3. Address and Telephone No.: P.O. Box 633, Midland, TX 79702 (915) 688-2585
4. Location of Well (Footage, Sec., T., R., M., or Survey Description): 660' FSL, 1980'FEL SEC.13, T41S, R23E BHL 901'N, 801'W FROM SURFACE LOCATION
8. Well Name and No.: RATHERFORD 13-34
9. API Well No.: 43-037-31130
10. Field and Pool, or exploratory Area: GREATER ANETH
11. County or Parish, State: SAN JUAN UT

12. CHECK APPROPRIATE BOX(s) TO INDICATE NATURE OF NOTICE, REPORT, OR OTHER DATA

TYPE OF SUBMISSION	TYPE OF ACTION	
[ ] Notice of Intent	[ ] Abandonment	[ ] Change of Plans
[X] Subsequent Report	[ ] Recompletion	[ ] New Construction
[ ] Final Abandonment Notice	[ ] Plugging Back	[ ] Non-Routine Fracturing
	[ ] Casing Repair	[ ] Water Shut-Off
	[ ] Altering Casing	[ ] Conversion to Injection
	[X] Other SIDETRACK	[ ] Dispose Water

(Note: Report results of multiple completion on Well Completion or Recompletion Report and Log form.)

13. Describe Proposed or Completed Operations (Clearly state all pertinent details, and give pertinent dates, including estimated date of starting any proposed work. If well is directionally drilled, give subsurface locations and measured and true vertical depths for all markers and zones pertinent to this work.)*

05-03-95 MIRU PU BIT & SCRAPER.
05-04-95 TIH W/SCRAPER & BIT TO PBTD AT 5508'
05-05-95 FISHED FOR CSG SCRAPER
05-07-95 LOAD HOLE W/FW TRY TO CIRC HOLE
05-08-95 COULD NOT MILL #1 OR MILL #2.
05-09-95 POOH W/MILL #2 TEST DP.
05-10-95 START CUT @ 5413'. MILL SEC. TO 5438'. TAG TOP & BTM OF WINDOW.
05-11-95 SET CICR AT 5278' DRILL OUT CICR. SPOT BALANCED CMT PLUG, PUMPED 50X CL G CMT (17.1 PPG, 1.03 Y, 9.2 BBL). PLUG SET FROM 5450' TO 5200'.
05-12-95 TAG CMT AT 5295'. TAG CMT AT 5292'. DRILL CMT TO 5350', 5375', 5390', 5395, 5400'. DRILL OUT PLUG TO 5446.
05-13-95 SPOT 100X CL G CMT W/0.5% CFR 3 2.5 PPS MICRO BOND. (1.03Y, 17.1 PPG. 18.3 BBL) TAG CMT AT 5044'. DRILL 5044-5220.
05-14-95 DRILL CMT FROM 5220' - 5415', 5386 - 5415', 5417' -5431.
05-15-95 DRILL 5473 - 5512', 5512 - 5605.
05-16-95 DRILL 5605 - 6050'
05-17-95 DRILL 6050 - 6290', 6290 - 6302' SEE ATTACHMENT

14. I hereby certify that the foregoing is true and correct
Signed Shirley Robertson Title ENV. & REG. TECHNICIAN Date 06-20-95

(This space for Federal or State office use)
Approved by _____ Title _____ Date _____
Conditions of approval, if any:

Title 18 U.S.C. Section 1001, makes it a crime for any person knowingly and willfully to make to any department or agency of the United States any false, fictitious or fraudulent statements or representations as to any matter within its jurisdiction.

* See Instruction on Reverse Side

#13
05-19-95 DRILL TD AT 6620'. DIRC. HOLE (9.9 WT)
05-20-95 LAY DOWN WS. RD DRILLING UNIT
05-23-95 CIRC. HOLE TO EQUALIZE MUD.
05-25-95 RIH W/TBG. SET PKR AT 5284'.
05-27-95 ACDZ HORIZ. HOLE FROM 6620 - 5560 W/318 BBLS 15% ACID. RDMO.

FORM 10

STATE OF UTAH
DIVISION OF OIL, GAS AND MINING
355 West North Temple, 3 Triad, Suite 350, Salt Lake City, UT 84180-1203

MONTHLY OIL AND GAS PRODUCTION REPORT

OPERATOR NAME AND ADDRESS:

C/O MOBIL OIL CORP
M E P N A
PO DRAWER G
CORTEZ CO 81321

UTAH ACCOUNT NUMBER: N7370

REPORT PERIOD (MONTH/YEAR): 6 / 95

AMENDED REPORT ☐ **(Highlight Changes)**

Well Name / API Number / Entity / Location	Producing Zone	Well Status	Days Oper	Production Volumes OIL(BBL)	GAS(MCF)	WATER(BBL)
RATHERFORD UNIT 20-31 4303731050 06280 41S 24E 20	ISMY					
RATHERFORD UNIT 20-42 4303731051 06280 41S 24E 20	DSCR					
RATHERFORD UNIT 21-11 4303731052 06280 41S 24E 21	DSCR					
RATHERFORD UNIT 29-11 4303731053 06280 41S 24E 29	DSCR					
RATHERFORD UNIT #18-24 4303731079 06280 41S 24E 18	DSCR					
RATHERFORD UNIT #19-11 4303731080 06280 41S 24E 19	DSCR					
THERFORD UNIT #19-44 4303731081 06280 41S 24E 19	DSCR					
RATHERFORD UNIT #29-22 4303731082 06280 41S 24E 29	DSCR					
RATHERFORD UNIT 12-34 4303731126 06280 41S 23E 12	DSCR					
RATHERFORD UNIT 13-12 4303731127 06280 41S 23E 13	DSCR					
RATHERFORD UNIT #13-21 4303731128 06280 41S 23E 13	DSCR					
RATHERFORD UNIT #13-23 4303731129 06280 41S 23E 13	DSCR					
RATHERFORD UNIT 13-34 (RE-ENTRY) 4303731130 06280 41S 23E 13	DSCR					
			TOTALS			

)MMENTS: _____

ie. .y certify that this report is true and complete to the best of my knowledge. Date: _____

me and Signature: _____ Telephone Number: _____

2/93)

Division of Oil, Gas and Mining

PHONE CONVERSATION DOCUMENTATION FORM

Route original/copy to:

[ ] Well File _____

_____

(Location) Sec___Twp___Rng___

(API No.) _____

[ ] Suspense

(Return Date) _____

(To - Initials) _____

[XX] Other

OPER NM CHG

_____

_____

1. Date of Phone Call: 8-3-95 Time: _____

2. DOGM Employee (name) L. CORDOVA (Initiated Call [ ])

Talked to:

Name R. J. FIRTH (Initiated Call [XX]) - Phone No. ( )

of (Company/Organization) _____

3. Topic of Conversation: M E P N A / N7370

4. Highlights of Conversation:

OPERATOR NAME IS BEING CHANGED FROM M E P N A (MOBIL EXPLORATION AND PRODUCING NORTH AMERICA INC) TO MOBIL EXPLOR & PROD. THE NAME CHANGE IS BEING DONE AT THIS TIME TO ALLEVIATE CONFUSION, BOTH IN HOUSE AND AMONGST THE GENERAL PUBLIC.

*SUPERIOR OIL COMPANY MERGED INTO M E P N A 4-24-86 (SEE ATTACHED).

Division of Oil, Gas and Mining
OPERATOR CHANGE WORKSHEET

Routing:
1-LEC 7-PL
2-LWP 8-SJ
3-DTS 9-FILE
4-VLC
5-RJF
6-LWP

Attach all documentation received by the division regarding this change.
Initial each listed item when completed. Write N/A if item is not applicable.

☐ Change of Operator (well sold) ☐ Designation of Agent
☐ Designation of Operator XXX Operator Name Change Only

The operator of the well(s) listed below has changed (EFFECTIVE DATE: **8-2-95**)

TO (new operator) **MOBIL EXPLOR & PROD**
(address) **C/O MOBIL OIL CORP**
PO DRAWER G
CORTEZ CO 81321
phone (303) 564-5212
account no. N7370

FROM (former operator) **M E P N A**
(address) **C/O MOBIL OIL CORP**
PO DRAWER G
CORTEZ CO 81321
phone (303)564-5212
account no. N7370

Well(s) (attach additional page if needed):

Name: **** SEE ATTACHED ****	API: 037-31130	Entity:	Sec	Twp	Rng	Lease Type:
Name:	API:	Entity:	Sec	Twp	Rng	Lease Type:
Name:	API:	Entity:	Sec	Twp	Rng	Lease Type:
Name:	API:	Entity:	Sec	Twp	Rng	Lease Type:
Name:	API:	Entity:	Sec	Twp	Rng	Lease Type:
Name:	API:	Entity:	Sec	Twp	Rng	Lease Type:
Name:	API:	Entity:	Sec	Twp	Rng	Lease Type:

OPERATOR CHANGE DOCUMENTATION

N/A 1. (Rule R615-8-10) Sundry or other legal documentation has been received from former operator (Attach to this form).

N/A 2. (Rule R615-8-10) Sundry or other legal documentation has been received from new operator (Attach to this form).

N/A 3. The Department of Commerce has been contacted if the new operator above is not currently operating any wells in Utah. Is company registered with the state? (yes/no) _____ If yes, show company file number: _____.

N/A 4. **(For Indian and Federal Wells ONLY)** The BLM has been contacted regarding this change (attach Telephone Documentation Form to this report). Make note of BLM status in comments section of this form. Management review of **Federal and Indian** well operator changes should take place prior to completion of steps 5 through 9 below.

Lec 5. Changes have been entered in the Oil and Gas Information System (Wang/IBM) for each well listed above. (8-3-95)

LWP 6. Cardex file has been updated for each well listed above. 8.31.95

LWP 7. Well file labels have been updated for each well listed above. 9-28-95

LC 8. Changes have been included on the monthly "Operator, Address, and Account Changes" memo for distribution to State Lands and the Tax Commission. (8-3-95)

LWP 9. A folder has been set up for the Operator Change file, and a copy of this page has been placed there for reference during routing and processing of the original documents.

– OVER –

OPERATOR CHANGE WORKSHEET (CONTINUED) Initial each item when completed. Write N/A if item is not applicable.

ENTITY REVIEW

Lec 1. (Rule R615-8-7) Entity assignments have been reviewed for all wells listed above. Were entity changes made? (yes/no) ____ (If entity assignments were changed, attach copies of Form 6, Entity Action Form).

N/A 2. State Lands and the Tax Commission have been notified through normal procedures of entity changes.

BOND VERIFICATION (Fee wells only) * No Fee Lease Wells at this time!

N/A/Lec 1. (Rule R615-3-1) The new operator of any fee lease well listed above has furnished a proper bond.

___ 2. A copy of this form has been placed in the new and former operators' bond files.

___ 3. The former operator has requested a release of liability from their bond (yes/no) ___. Today's date _____ 19___. If yes, division response was made by letter dated _____ 19___.

LEASE INTEREST OWNER NOTIFICATION RESPONSIBILITY

N/A 1. (Rule R615-2-10) The former operator/lessee of any **fee lease** well listed above has been notified by letter dated _____ 19___, of their responsibility to notify any person with an interest in such lease of the change of operator. Documentation of such notification has been requested.
DTS 8/5/95

N/A 2. Copies of documents have been sent to State Lands for changes involving **State leases.**

FILMING

✓ 1. All attachments to this form have been microfilmed. Date: October 6 19 95.

FILING

___ 1. Copies of all attachments to this form have been filed in each well file.

___ 2. The original of this form and the original attachments have been filed in the Operator Change file.

COMMENTS

950803 UIC F5/Not necessary!

Form 3160-5
(June 1990)

UNITED STATES
DEPARTMENT OF THE INTERIOR
BUREAU OF LAND MANAGEMENT

FORM APPROVED
Budget Bureau No. 1004-0135
Expires: March 31, 1993

SUNDRY NOTICES AND REPORTS ON WELLS

Do not use this form for proposals to drill or to deepen or reentry to a different reservoir.
Use "APPLICATION FOR PERMIT - " for such proposals

SUBMIT IN TRIPLICATE

5. Lease Designation and Serial No.: 14-20-603-247
6. If Indian, Allottee or Tribe Name: NAVAJO TRIBAL
7. If Unit or CA, Agreement Designation: RATHERFORD UNIT

1. Type of Well: [X] Oil Well [ ] Gas Well [ ] Other SIDETRACT
2. Name of Operator: Mobil Exploration & Producing U.S. Inc. as Agent for Mobil Producing TX & NM Inc.
3. Address and Telephone No.: P.O. Box 633, Midland, TX 79702 915-688-2585
4. Location of Well (Footage, Sec., T., R., M., or Survey Description): 660' FSL, 1980' FEL (SW SE) SEC.13, T41S, R23E BHL: 901' N, 801' W F/SURFACE LOCATION
8. Well Name and No.: RATHERFORD 13-34
9. API Well No.: 43-037-31130
10. Field and Pool, or exploratory Area: GREATER ANETH
11. County or Parish, State: SAN JUAN UT

12. CHECK APPROPRIATE BOX(s) TO INDICATE NATURE OF NOTICE, REPORT, OR OTHER DATA

TYPE OF SUBMISSION	TYPE OF ACTION	
[ ] Notice of Intent	[ ] Abandonment	[ ] Change of Plans
[ ] Subsequent Report	[ ] Recompletion	[ ] New Construction
[ ] Final Abandonment Notice	[ ] Plugging Back	[ ] Non-Routine Fracturing
	[ ] Casing Repair	[ ] Water Shut-Off
	[ ] Altering Casing	[ ] Conversion to Injection
	[X] Other ACIDIZE	[ ] Dispose Water

(Note: Report results of multiple completion on Well Completion or Recompletion Report and Log form.)

13. Describe Proposed or Completed Operations (Clearly state all pertinent details, and give pertinent dates, including estimated date of starting any proposed work. If well is directionally drilled, give subsurface locations and measured and true vertical depths for all markers and zones pertinent to this work.)*

04-03-97 NOTIFIED NAVAJO EPA(ANSWERING MACHINE), STATE OF UTAH OIL & GAS (JIM THOMPSON) OF INTENT TO ACIDIZE. RIG UP MONTEZUMA WELL SERVICE.
04-04-97 FLOWING CSG. PRESS @ 7:30 WAS 70 PSI.RIH W/2 7/8" TBG. TO 5354'. FLOWLINE OVERNIGHT.
04-05-97 SI CSG. PRES @ 70 PSI, SET PKR @ 5272'. TEST PKR TO 500 PSI. OK, MOVE IN COIL TBG UNIT. SWIFN.
04-06-97 SI PRES @ 7:30 WAS 70 PSI. TEST LINES TO 2000 PSI, RIH W/COILED TBG TO 6620'. W/16,000 GALS 15% HCL ACID. SWAB WELL F/1350-3200' 4 HRS. SIFN.
04-07-97 SITP @ 7:30 WAS 20 PSI, SWAB WELL DOWN F/3000-3700'. REL. PKR. SIFN.
04-08-97 SICP @ 7:30 WAS 70 PSI, PICK-UP & RIH W/ESP DOWNHOLE ELEC. PUMP TO 5375'. START PUMP & PRES. UP TO 165 PSI. RIG DOWN MONTEZUMA RIG.

RECEIVED
MAY 15 1997
DIV. OF OIL, GAS & MINING

14. I hereby certify that the foregoing is true and correct
Signed Shirley Houchins Title ENV. & REG. TECHNICIAN Date 05-9-97

(This space for Federal or State office use)
Approved by _____ Title _____ Date _____
Conditions of approval, if any:

Title 18 U.S.C. Section 1001, makes it a crime for any person knowingly and willfully to make to any department or agency of the United States any false, fictitious or fraudulent statements or representations as to any matter within its jurisdiction.

* See Instruction on Reverse Side

WO tax credit - 9/97

Form 3160-5
(June 1990)

UNITED STATES
DEPARTMENT OF THE INTERIOR
BUREAU OF LAND MANAGEMENT

FORM APPROVED
Budget Bureau No. 1004-0135
Expires: March 31, 1993

SUNDRY NOTICES AND REPORTS ON WELLS

Do not use this form for proposals to drill or to deepen or reentry to a different reservoir.
Use "APPLICATION FOR PERMIT - " for such proposals

SUBMIT IN TRIPLICATE

5. Lease Designation and Serial No.: 14-20-603-247
6. If Indian, Allottee or Tribe Name: NAVAJO TRIBAL
7. If Unit or CA, Agreement Designation: RATHERFORD UNIT
8. Well Name and No.: RATHERFORD 13-34
9. API Well No.: 43-037-31130
10. Field and Pool, or exploratory Area: GREATER ANETH
11. County or Parish, State: SAN JUAN UT

1. Type of Well: [X] Oil Well [ ] Gas Well [ ] Other SIDETRACT
2. Name of Operator: Mobil Exploration & Producing U.S. Inc. as Agent for Mobil Producing TX & NM Inc.
3. Address and Telephone No.: P.O. Box 633, Midland, TX 79702 915-688-2585
4. Location of Well (Footage, Sec., T., R., M., or Survey Description)
660' FSL, 1980' FEL (SW SE)
SEC.13, T41S, R23E
BHL: 901' N, 801' W F/SURFACE LOCATION

12. CHECK APPROPRIATE BOX(s) TO INDICATE NATURE OF NOTICE, REPORT, OR OTHER DATA

TYPE OF SUBMISSION	TYPE OF ACTION	
[X] Notice of Intent	[ ] Abandonment	[ ] Change of Plans
[ ] Subsequent Report	[ ] Recompletion	[ ] New Construction
[ ] Final Abandonment Notice	[ ] Plugging Back	[ ] Non-Routine Fracturing
	[ ] Casing Repair	[ ] Water Shut-Off
	[ ] Altering Casing	[ ] Conversion to Injection
	[X] Other SIDETRACT	[ ] Dispose Water

(Note: Report results of multiple completion on Well Completion or Recompletion Report and Log form.)

13. Describe Proposed or Completed Operations (Clearly state all pertinent details, and give pertinent dates, including estimated date of starting any proposed work. If well is directionally drilled, give subsurface locations and measured and true vertical depths for all markers and zones pertinent to this work.)*

BHL: LATERAL #2, 1697' SOUTH & 1697' EAST F/SURFACE SPOT (ZONE 1B). 293 FEL 1210 FNL
BHL: LATERAL #3, 1721' SOUTH & 2457' EAST F/SURFACE SPOT (ZONE 1a). 463 FWL 1002 FNL
19 41S 24E

See attached procedure

RECEIVED
AUG 21 1997
DIV. OF OIL, GAS & MINING

14. I hereby certify that the foregoing is true and correct
Signed Sue Mosley for Shirley Hudgins ENV. & REG. TECHNICIAN Date 08-18-97

(This space for Federal or State office use)
Approved by John R. Baza Title Associate Director, Utah Div. of Oil, Gas & Mining Date 8/28/97
Conditions of approval, if any:

Title 18 U.S.C. Section 1001, makes it a crime for any person knowingly and willfully to make to any department or agency of the United States any false, fictitious or fraudulent statements or representations as to any matter within its jurisdiction.

* See Instruction on Reverse Side

Ratherford Unit Well #13-34
Multilateral Horizontal Drilling Procedure

The objective of this procedure is to prepare this wellbore for sidetracking, sidetrack the subject well and drill multiple short radius horizontal laterals (2400-3000 ft).

1. Prepare location and dig working pit.

2. MIRU WSU, reverse unit, and H_2S equipment. Bullhead kill weight fluid down tubing.

3. Release packer, and pick up on wellhead to remove. ND wellhead and NU BOP's. Pressure test BOP's.

4. Continue to POH with tubing.

5. TIH with full gauge bit and casing scraper to PBTD. TOH with bit and scraper.

6. Ensure well will circulate, and set RTBP above perfs. **Pressure test casing to 1000 psi.**

7. RDMO WSU.

8. MIRU 24 hr WSU.

9. PU tubing, drill collars, and drill pipe in derrick and run in hole. Then POH and stand back.

10. RU wireline company and run gauge ring for casing down to packer setting depth.

11. Run packer on wireline and set using GR/CCL log to correlate with. RD wireline.

12. PU drillpipe with UBHO sub and latch assembly.

13. Latch into packer. Run gyro and obtain orientation of keyway on packer.

14. POH w/ gyro. POH w/ drill pipe and RIH w/ whipstock oriented on the surface for window azimuth desired.

15. Shear pilot mill bolt and start milling window.

16. POH and PU window mill and watermelon mill to finish window and drill 3 ft of formation.

17. POH w/ mills and RBIH w/ new mills to clean up window.

18. PU drill pipe and directional motors to drill curve. Use the gyro to drill until the inclination dictates that the gyro must be pulled.

19. Pull five stands of drill pipe and run steering tool to finish drilling the curve.

20. POH once curve is finished and PU lateral motor to drill the lateral using MWD.

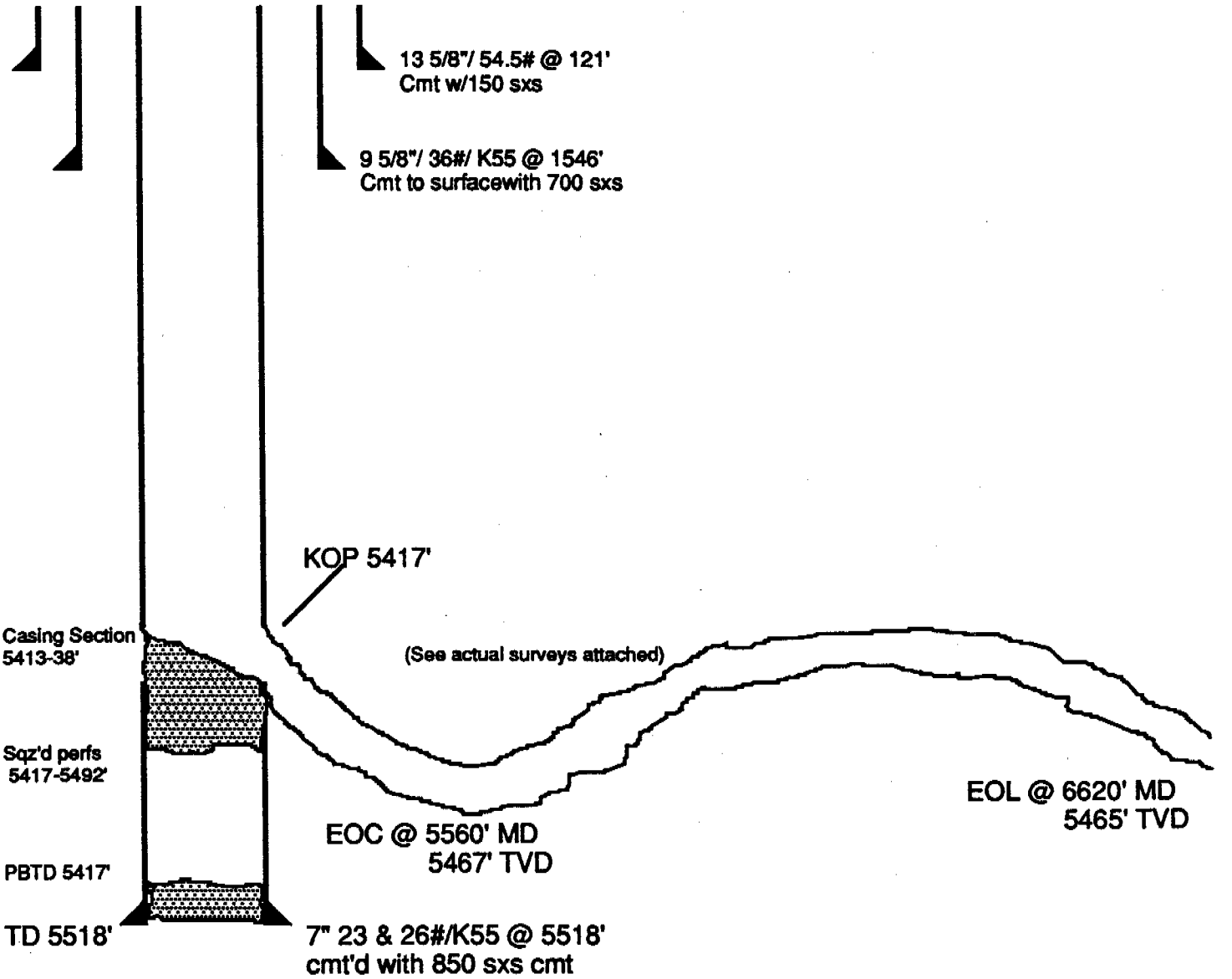
21. Once lateral TD is reached, POH w/ directional equipment.

22. RIH w/ hook and retrieve whipstock.

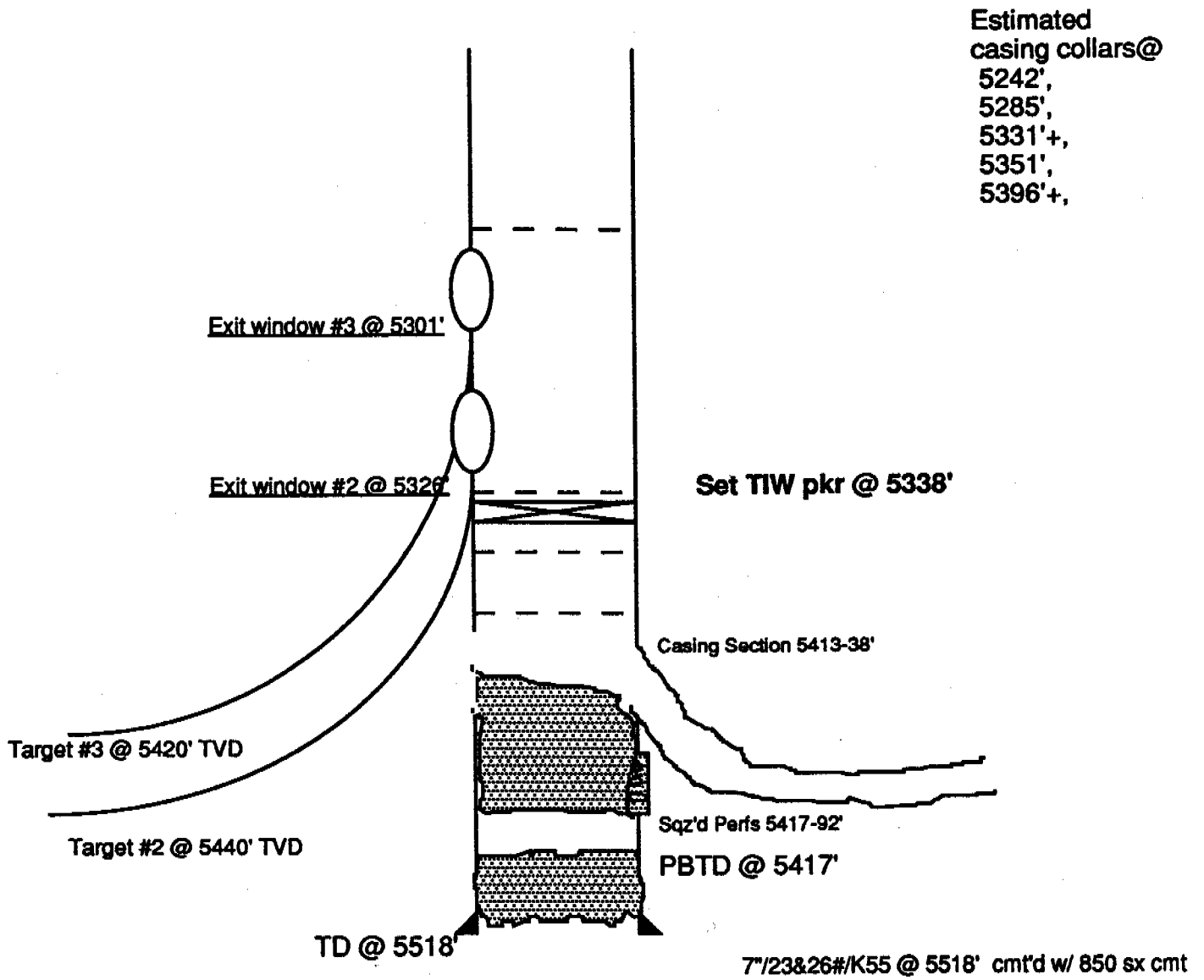
23. PU new whipstock with extension in body for next window and orient on surface to desired azimuth.

24. Repeat steps 15-23, for each successive planned lateral.

Ratherford Unit #13-34
Current Condition



Whipstock plan for Ratherford #13-34



Casing (from btm)	
25 jts 26#/K55/LTC	(will be milling here)
90 jts 23#/K55/STC	
9 jts 23#/K55/STC	
1 jts 23#/K55/STC	
1 jt 26#/K55/LTC	

Window	Btm-Top of window	Extension length	Curve radius	Bearing	Horiz Displ
2	5326-16	-	114	135	2400
3	5300-5290	26	120	125	3000

*The double spline is 2.77 ft long and the bottom of the whipstock, latch, and debris sub and shear sub are 11.68 ft long. These lengths must be added to the extension lengths to determine the entire whipstock assembly length.

WORKSHEET
APPLICATION FOR PERMIT TO DRILL

APD RECEIVED: 08/21/97

API NO. ASSIGNED: 43-037-31130

WELL NAME: RATHERFORD ~~31~~ 13-34 MULTI-LEG
OPERATOR: MOBIL EXPL & PROD (N7370)

PROPOSED LOCATION:
SWSE 13 - T41S - R23E
SURFACE: 0660-FSL-1980-FEL
BOTTOM: 1002-FNL-0463-FWL
SAN JUAN COUNTY
GREATER ANETH FIELD (365)

LEASE TYPE: IND
LEASE NUMBER: 14-20-603-247

PROPOSED PRODUCING FORMATION: DSCR

INSPECT LOCATION BY: / /		
TECH REVIEW	Initials	Date
Engineering		
Geology		
Surface		

RECEIVED AND/OR REVIEWED:

✓ Plat
✓ Bond: Federal [✓] State [] Fee []
(Number UNKNOWN)
✓ Potash (Y/N)
✓ Oil shale (Y/N)
✓ Water permit
(Number NAVAJO ALLOTMENT)
N RDCC Review (Y/N)
(Date: _____)

LOCATION AND SITING:

✓ R649-2-3. Unit: RATHERFORD
___ R649-2-3. General.
___ R649-3-3. Exception.
___ Drilling Unit.
Board Cause no: _____
Date: _____

COMMENTS: _____

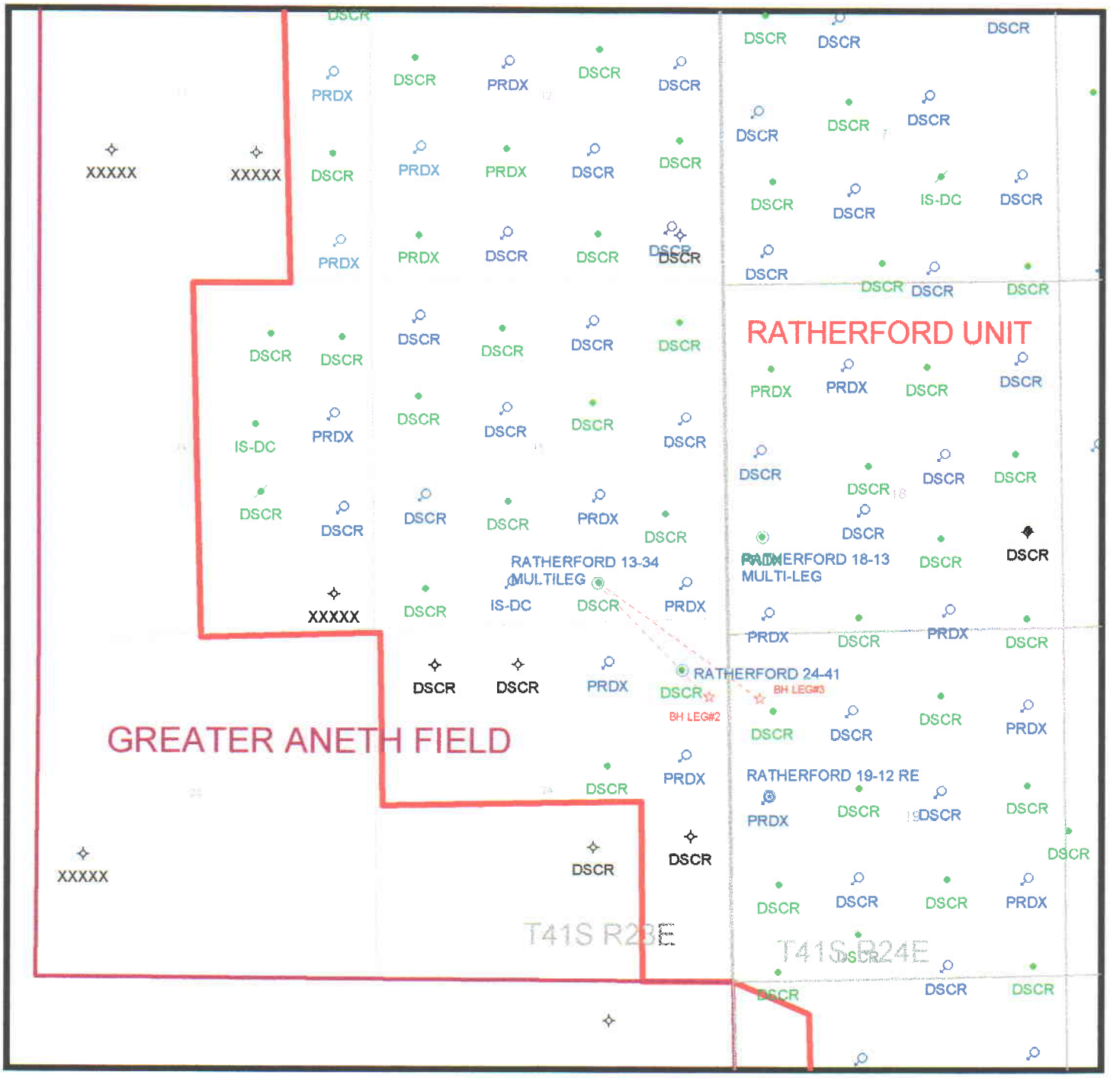
STIPULATIONS: 1. Directional drilling.

OPERATOR: MOBIL EXPL & PROD (N7370)

FIELD: GREATER ANETH (365)

SEC, TWP, RNG: SEC. 13, T41S, R23E

COUNTY: DUCHESNE UAC: R649-2-3 RATHERFORD



PREPARED:
DATE: 26-AUG-97

State of Utah
DEPARTMENT OF NATURAL RESOURCES
DIVISION OF OIL, GAS AND MINING

Michael O. Leavitt
Governor
Ted Stewart
Executive Director
James W. Carter
Division Director

1594 West North Temple, Suite 1210
Box 145801
Salt Lake City, Utah 84114-5801
801-538-5340
801-359-3940 (Fax)
801-538-7223 (TDD)

August 28, 1997

Mobil Exploration & Producing U.S., Inc.
P.O. Box 633
Midland, Texas 79702

Re: Ratherford 13-34 (Re-entry) Well, 660' FSL, 1980' FEL, SW SE, Sec. 13, T. 41 S., R. 23 E., San Juan County, Utah

Gentlemen:

Pursuant to the provisions and requirements of Utah Code Ann. 40-6-1 et seq., Utah Administrative Code R649-3-1 et seq., and the attached Conditions of Approval, approval to re-enter and drill the referenced well is granted.

This approval shall expire one year from the above date unless substantial and continuous operation is underway, or a request for extension is made prior to the expiration date. The API identification number assigned to this well is 43-037-31130.

Sincerely,

John R. Baza
Associate Director

lwp
Enclosures
cc: San Juan County Assessor
Bureau of Land Management, Moab District Office

Operator: Mobil Exploration & Producing U.S., Inc.

Well Name & Number: Ratherford 13-34 (Re-entry)

API Number: 43-037-31130

Lease: 14-20-603-247

Location: SW SE **Sec.** 13 **T.** 41 S. **R.** 23 E.

Conditions of Approval

1. General
   Compliance with the requirements of Utah Admin. R. 649-1 et seq., the Oil and Gas Conservation General Rules, and the applicable terms and provisions of the approved Application for Permit to Drill.

2. Notification Requirements
   Notify the Division within 24 hours following spudding the well or commencing drilling operations. Contact Jim Thompson at (801)538-5336.

   Notify the Division prior to commencing operations to plug and abandon the well. Contact John R. Baza (801)538-5334.

3. Reporting Requirements
   All required reports, forms and submittals shall be promptly filed with the Division, including but not limited to the Entity Action Form (Form 6), Report of Water Encountered During Drilling (Form 7), Weekly Progress Reports for drilling and completion operations, and Sundry Notices and Reports on Wells requesting approval of change of plans or other operational actions.

4. In accordance with Utah Admin. R. 649-3-11, Directional Drilling, submittal of a complete angular deviation and directional survey report is required.

DIVISION OF OIL, GAS AND MINING

SPUDDING INFORMATION

Name of Company: MOBIL E & P

Well Name: RATHERFORD UNIT 13-34 (SDTRK)

Api No. 43-037-31130

Section: 13 Township: 41S Range: 23E County: SAN JUAN

Drilling Contractor: BIG "A"

Rig # 25

SPUDDED:

Date: 9/16/97

Time:

How: ROTARY

Drilling will commence:

Reported by: BENNIE BRIGGS

Telephone NO.:

Date: 10/6/97 Signed: JLT

ROCKY MOUNTAIN GEO-ENGINEERING
Well Logging • Consulting Geology • Coal Bed Methane Services • Computerized Logging Equipment & Software
ROCKY MOUNTAIN GEO-ENGINEERING CORP.
2450 INDUSTRIAL BLVD. • GRAND JUNCTION, CO 81505
(970) 243-3044 • (FAX) 241-1085

Saturday, October 11, 1997

Division of Oil & Gas Mining
State of Utah
1636 W. North Temple
Salt Lake City, UT 84116

Re: Ratherford Unit #13-34 Legs 2, 2ST, & 3
Sec. 13, T41S, ~~R24E~~ R23E
San Juan County, Utah

43 037 31130
DRL

Dear Sirs:

Enclosed are the final computer colored logs and geology reports for the above referenced well.
IN LOG FILE

We appreciate the opportunity to be of service to you and look forward to working with you again in the near future.

If you have any questions regarding the enclosed data, please contact us.

Sincerely,

Bill Nagel
Senior Geologist

BN/dn

Enc. 1 Final Computer Colored Log & 1 Geology Report

cc Letter Only; Dana Larson; Mobil E & P U.S., Inc.; Midland, TX

MOBIL

RATHERFORD UNIT #13-34
SE HORIZONTAL LATERAL LEG #2
& SIDETRACK
1-C & 1-B POROSITY BENCHES
DESERT CREEK MEMBER
PARADOX FORMATION
SECTION 13, T41S, R23E
SAN JUAN, UTAH

GEOLOGY REPORT
by
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ROCKY MOUNTAIN GEO-ENGINEERING CORP.
GRAND JUNCTION, COLORADO
(970) 243-3044

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WELL SUMMARY

OPERATOR:	MOBIL EXPLORATION & PRODUCTION U.S. INC.
NAME:	RATHERFORD UNIT #13-34 SE HORIZONTAL LATERAL LEG #2 & SIDETRACK IN 1-C & 1-B POROSITY BENCHES, DESERT CREEK
LOCATION:	SECTION 13, T41S, R23E
COUNTY/STATE:	SAN JUAN, UTAH
ELEVATION:	KB: 4694' GL: 4682'
SPUD DATE:	09/16/97
COMPLETION DATE:	09/27/97
DRILLING ENGINEER:	SIMON BARRERA /BENNY BRIGGS
WELLSITE GEOLOGY:	DAVE MEADE / MARVIN ROANHORSE
MUDLOGGING ENGINEERS:	DAVE MEADE / MARVIN ROANHORSE
CONTRACTOR: **TOOLPUSHER:**	BIG "A" RIG 25 J. DEES
HOLE SIZE:	4 3/4"
CASING RECORD:	SIDETRACK IN WINDOW AT 5329' MEASURED DEPTH
DRILLING MUD: **ENGINEER:** **MUD TYPE:**	M-I RON WESTENBERG/ DANNE BEASON FRESH WATER & BRINE WATER W/ POLYMER SWEEPS
DIRECTIONAL DRILLING CO:	SPERRY-SUN
ELECTICAL LOGGING:	NA
TOTAL DEPTH:	7516' MEASURED DEPTH; 5444.36' TRUE VERTICAL DEPTH
STATUS:	TOH & LAY DOWN TOOLS - PREPARE FOR LEG #3

DRILLING CHRONOLOGY
RATHERFORD UNIT #13-34
1-C/1-B SE HORIZONTAL LATERAL LEG#2 & SIDETRACK

DATE	DEPTH	DAILY	ACTIVITY
9/15/97		0'	MOVE RIG-RIG UP RIG & BEGIN RIGGING UP SWATCO EQUIPMENT
9/16/97	5311'	0'	FINISH RIGGING UP RIG-RIG UP SWATCO EQUIPMENT-REPAIR RIG BRAKES-TIH W/PACKER-RUN GYRO & ORIENT
9/17/97	5311'	5'	ORIENT PACKER-TIH W/WHIPSTOCK & STARTER MILL-ORIENT & MILL-TOOH W/ STARTER MILL-L.D. STARTER MILL-P.U. WINDOW & WATERMELLON MILLS-TIH-MILL
9/18/97	5316'	4'	MILL FROM 5326'-5330'-CIR & CLEAN HOLE-TOOH-L.D. MILLS-P.U. CURVE ASSEMBLY-ORIENT & TEST
9/19/97	5320'	23'	TIH-CIR-RIG UP GYRO DATA & RUN GYRO-TIME DRLG @ 2MIN/INCH FROM 5330'/5368'-RIG DOWN GYRO DATA-DIR DRLG & SURVEYS
9/20/97	5353'	526'	DIR DRLG & SURVEYS TO 5566'-PUMP 8 BBL SWEEP & CIR OUT SMPLS-HANG SWIVEL & L.D. 71 JNTS AOH D.P. & TOOH-L.D. CURVE BHA-P.U. LATERAL BHA(RR BIT #1)-P.U. 70 JNTS PH6 DP-CUT 60' DRLGLINE-TIH-CIR-DIR DRLG & SURVEYS
9/21/97	5879'	635'	DIR DRLG & SURVEYS
9/22/97	6514'	712'	DIR DRLG & SURVEYS
9/23/97	7226'	5'	DIR DRLG & SURVEYS-PUMP SWEEP & CIR OUT SMPLS @ 7344'-TOH-DECISION MADE TO PULL BACK TO 6656.76 MD & SIDETRACK LEG#2 @ 6657' MD-CHECK BHA & P.U. NB #2-NOTE:TRIP GAS CIR. THRU GAS BUSTER UNLOADED HOLE-TIME DRLG (TROUGH) FR 6656'-6661' @ 5 MIN/INCH
9/24/97	6661'	306'	TIME DRLG (TROUGH) FR 6661'-6665' @ 4 MIN/INCH,6665'-6668' @ 3 MIN/INCH & 6668'-6670' @ 1 MIN/INCH- DIR DRLG & SURVEYS-MWD FAILED @ 6967' PUMP SWEEPS-L.D. 2 JNTS D.P.-TOH TO WINDOW-PUMP 40 BBLS BRINE-TOH-L.D. MTR & CHANGE OUT MWD-P.U. NEW MTR-TIH-CIR.-DRLG-CIR. OUT TRIP GAS THRU CHOKE & GAS BUSTER
9/25/97	6967'	318'	CIR. BTMS UP THRU CHOKE- DIR DRLG & SURVEYS
9/26/97	7285'	231'	DIR DRLG & SURVEYS
9/27/97	7516'		DIR DRLG & SURVEYS TO TD OF 7516'-CIR SWEEP & SMPLS

DAILY ACTIVITY

Operator: MOBIL
Well Name: RATHERFORD UNIT #13-34 SE 1-C/1-B HORIZONTAL LATERAL LEG#2 & SIDETRACK

DATE	DEPTH	DAILY	DATE	DEPTH	DAILY
9/15/97	MOVED RIG				
9/16/97	5311'	0'			
9/17/97	5311'	5'			
9/18/97	5316'	4'			
9/19/97	5320'	233'			
9/20/97	5553'	326'			
9/21/97	5879'	635'			
9/22/97	6514'	712'			
9/23/97	7226'	118'			
TD	7344'				
BEGIN SIDETRACK					
9/23/97	6656'	5'			
9/24/97	6661'	306'			
9/25/97	6967'	318'			
9/26/97	7285'	231'			
9/27/97	7516'	0'			
TD	7516'				

BIT RECORD

OPERATOR: MOBIL
WELL NAME: RATHERFORD UNIT #13-34 SE 1-C/1-B HORIZONTAL LATERAL LEG#2 & SIDETRACK

RUN	SIZE	MAKE	TYPE	IN/OUT	FTG	HRS	FT/HR
#1	4 3/4"	HTC	STR-30	5310'/ 7344'	2,014'	86.5	23.3
#2 SIDETRACK	4 3/4"	HTC	STR-20	6656'/ 7516'	860'	52	16.5

SPERRY-SUN DRILLING SERVICES
SURVEY DATA

Customer ... : MOBIL (UTAH)
Platform ... : RATHERFORD UNIT
Slot/Well .. : BA25/13-34 L2

MEASURED DEPTH	ANGLE DEG	DIRECTION DEG	TVD	NORTHINGS FEET	EASTINGS FEET	VERTICAL SECTION	DOG LEG
5300.00	0.48	205.98	5298.47	39.32 N	24.96 W	-45.46	0.00
5311.00	0.49	207.31	5309.47	39.24 N	25.00 W	-45.43	0.14
5320.00	3.70	203.90	5318.46	38.94 N	25.14 W	-45.31	35.68
5330.00	6.90	160.40	5328.42	38.08 N	25.07 W	-44.65	49.23
5340.00	10.70	168.80	5338.30	36.60 N	24.69 W	-43.34	40.02
5350.00	15.40	162.50	5348.04	34.42 N	24.11 W	-41.39	49.04
5360.00	19.80	158.80	5357.57	31.58 N	23.09 W	-38.66	45.38
5370.00	24.00	158.80	5366.85	28.10 N	21.75 W	-35.25	42.00
5380.00	28.30	158.10	5375.82	24.00 N	20.13 W	-31.20	43.11
5390.00	32.40	158.60	5384.45	19.31 N	18.26 W	-26.56	41.08
5400.00	36.70	158.60	5392.69	14.03 N	16.19 W	-21.37	43.00
5410.00	40.50	159.30	5400.50	8.20 N	13.95 W	-15.67	38.25
5420.00	43.80	160.40	5407.91	1.90 N	11.65 W	-9.58	33.81
5430.00	47.80	161.40	5414.88	4.87 S	9.30 W	-3.14	40.64
5440.00	52.10	161.90	5421.32	12.13 S	6.89 W	3.70	43.17
5450.00	56.20	161.40	5427.17	19.82 S	4.34 W	10.95	41.20
5460.00	60.70	160.90	5432.40	27.89 S	1.59 W	18.60	45.20
5470.00	64.70	159.80	5436.99	36.25 S	1.40 E	26.63	41.18
5480.00	68.20	156.60	5440.98	44.76 S	4.81 E	35.05	45.66
5490.00	71.70	153.70	5444.41	53.28 S	8.76 E	43.87	44.35
5500.00	75.00	151.00	5447.28	61.76 S	13.20 E	53.01	41.93
5510.00	77.60	147.60	5449.65	70.12 S	18.16 E	62.42	42.03
5520.00	79.10	143.20	5451.67	78.17 S	23.72 E	72.05	45.63
5530.00	80.30	139.30	5453.46	85.85 S	29.88 E	81.83	40.20
5540.00	82.80	137.00	5454.92	93.21 S	36.48 E	91.71	33.80
5566.00	91.20	134.00	5456.28	111.71 S	54.66 E	117.64	34.30
5580.66	90.60	133.00	5456.05	121.80 S	65.29 E	132.30	7.95
5612.47	88.80	131.10	5456.22	143.10 S	88.91 E	164.06	8.23
5644.19	89.10	133.00	5456.80	164.34 S	112.46 E	195.73	6.06
5675.95	88.90	131.90	5457.36	185.78 S	135.89 E	227.46	3.52
5707.05	88.20	131.20	5458.14	206.40 S	159.16 E	258.49	3.18
5738.80	88.90	129.80	5458.95	227.01 S	183.29 E	290.13	4.93
5770.52	89.30	129.50	5459.44	247.25 S	207.71 E	321.71	1.58
5802.28	90.00	128.90	5459.64	267.32 S	232.33 E	353.30	2.90
5834.06	90.60	129.30	5459.47	287.36 S	256.99 E	384.92	2.27
5865.73	90.40	127.90	5459.20	307.12 S	281.74 E	416.39	4.47
5897.46	91.10	127.00	5458.78	326.41 S	306.92 E	447.84	3.59
5929.30	91.60	126.70	5458.03	345.50 S	332.40 E	479.35	1.83

SPERRY-SUN DRILLING SERVICES
SURVEY DATA

Customer ... : MOBIL (UTAH)
Platform ... : RATHERFORD UNIT
Slot/Well .. : BA25/13-34 L2

MEASURED DEPTH	ANGLE DEG	DIRECTION DEG	TVD	NORTHINGS FEET	EASTINGS FEET	VERTICAL SECTION	DOG LEG
5961.00	91.40	126.10	5457.20	364.31 S	357.90 E	510.68	1.99
5991.97	91.90	126.10	5456.31	382.55 S	382.92 E	541.26	1.61
6023.77	89.20	128.80	5456.00	401.88 S	408.15 E	572.78	12.01
6055.50	88.20	128.10	5456.72	421.61 S	433.00 E	604.30	3.85
6087.29	90.00	130.50	5457.22	441.74 S	457.59 E	635.92	9.44
6118.48	91.70	133.00	5456.76	462.50 S	480.86 E	667.05	9.69
6150.32	93.00	135.40	5455.45	484.68 S	503.66 E	698.86	8.57
6182.06	93.30	138.40	5453.71	507.81 S	525.31 E	730.53	9.48
6213.91	92.60	139.50	5452.07	531.80 S	546.20 E	762.26	4.09
6244.51	92.50	138.30	5450.71	554.84 S	566.30 E	792.76	3.93
6276.40	89.00	137.60	5450.29	578.51 S	587.65 E	824.60	11.19
6308.11	87.70	137.60	5451.20	601.92 S	609.02 E	856.26	4.10
6339.91	87.30	135.10	5452.59	624.90 S	630.95 E	888.02	7.95
6371.75	88.10	134.90	5453.87	647.40 S	653.45 E	919.84	2.59
6403.45	89.20	134.70	5454.62	669.73 S	675.93 E	951.53	3.53
6435.15	91.20	134.90	5454.51	692.07 S	698.43 E	983.23	6.34
6466.98	89.40	133.30	5454.34	714.21 S	721.28 E	1015.05	7.57
6498.68	90.40	133.00	5454.39	735.89 S	744.41 E	1046.73	3.29
6530.39	89.30	131.20	5454.48	757.15 S	767.94 E	1078.40	6.65
6562.12	89.70	130.50	5454.75	777.90 S	791.94 E	1110.04	2.54
6593.88	90.80	132.60	5454.62	798.97 S	815.70 E	1141.74	7.46
6625.76	90.90	132.50	5454.14	820.52 S	839.18 E	1173.59	0.44
6657.37	90.90	134.70	5453.65	842.32 S	862.07 E	1205.19	6.96
6689.21	91.00	133.00	5453.12	864.37 S	885.03 E	1237.01	5.35
6721.02	92.00	136.90	5452.28	886.83 S	907.53 E	1268.81	12.65
6752.84	91.70	137.20	5451.26	910.11 S	929.20 E	1300.59	1.33
6784.61	90.80	137.90	5450.56	933.55 S	950.64 E	1332.32	3.59
6816.37	91.60	138.40	5449.90	957.20 S	971.82 E	1364.03	2.97
6848.23	89.10	137.20	5449.70	980.80 S	993.22 E	1395.84	8.70
6880.05	84.60	134.90	5451.45	1003.67 S	1015.26 E	1427.60	15.88
6911.89	85.10	134.40	5454.31	1025.95 S	1037.82 E	1459.31	2.22
6943.72	89.20	134.40	5455.89	1048.19 S	1060.53 E	1491.09	12.88
6975.53	89.80	134.60	5456.17	1070.49 S	1083.22 E	1522.90	1.99

SPERRY-SUN DRILLING SERVICES
SURVEY DATA

Customer ... : MOBIL (UTAH)
Platform ... : RATHERFORD UNIT
Slot/Well .. : BA25/13-34 L2

MEASURED DEPTH	ANGLE DEG	DIRECTION DEG	TVD	NORTHINGS FEET	EASTINGS FEET	VERTICAL SECTION	DOG LEG
6975.53	89.80	134.60	5456.17	1070.49 S	1083.22 E	1522.90	1.99
7007.26	90.80	134.70	5456.01	1092.79 S	1105.79 E	1554.63	3.17
7038.43	87.90	133.50	5456.36	1114.47 S	1128.17 E	1585.79	10.07
7069.39	90.70	133.30	5456.74	1135.74 S	1150.66 E	1616.73	9.07
7101.14	91.20	132.60	5456.21	1157.37 S	1173.90 E	1648.46	2.71
7132.97	89.00	132.50	5456.16	1178.89 S	1197.35 E	1680.26	6.92
7164.72	87.20	133.50	5457.21	1200.53 S	1220.55 E	1711.97	6.48
7195.68	88.20	133.00	5458.45	1221.73 S	1243.08 E	1742.89	3.61
7227.50	88.50	132.30	5459.37	1243.28 S	1266.48 E	1774.67	2.39
7259.20	90.50	131.90	5459.64	1264.53 S	1290.00 E	1806.32	6.43
7290.92	90.00	131.80	5459.51	1285.69 S	1313.62 E	1837.99	1.61
7313.00	88.40	132.30	5459.81	1300.48 S	1330.02 E	1860.04	7.59
* 7344.00	88.40	132.30	5460.68	1321.34 S	1352.94 E	1891.00	0.00 *

THE DOGLEG SEVERITY IS IN DEGREES PER 100.00 FEET.
N/E COORDINATE VALUES GIVEN RELATIVE TO WELL SYSTEM REFERENCE POINT.
TVD COORDINATE VALUES GIVEN RELATIVE TO WELL HEAD.
THE VERTICAL SECTION ORIGIN IS WELL HEAD.
THE VERTICAL SECTION WAS COMPUTED ALONG 135.00 (TRUE).
CALCULATION METHOD: MINIMUM CURVATURE.

* 7344 FT PROJECTED TO BIT, 5300 TIE-IN.
5320 - 5510 HAVE MAGNETIC INTERFERENCE.
5311 INTERPOLATED GYRO, 5320 - 5540 MWD SURVEYS.

SPERRY-SUN DRILLING SERVICES
SURVEY DATA

Customer ... : MOBIL (UTAH)
Platform ... : RATHERFORD UNIT
Slot/Well .. : BA25/13-34 2A1B1

MEASURED DEPTH	ANGLE DEG	DIRECTION DEG	TVD	NORTHINGS FEET	EASTINGS FEET	VERTICAL SECTION	DOG LEG
0.00	0.00	0.00	0.00	0.00 N	0.00 E	0.00	0.00
5300.00	0.48	205.98	5298.47	39.33 N	24.97 W	-45.46	0.00
5311.00	0.49	207.31	5309.47	39.24 N	25.01 W	-45.43	0.14
5320.00	3.70	203.90	5318.46	38.94 N	25.14 W	-45.32	35.68
5330.00	6.90	160.40	5328.42	38.08 N	25.07 W	-44.66	49.23
5340.00	10.70	168.80	5338.30	36.61 N	24.69 W	-43.34	40.02
5350.00	15.40	162.50	5348.04	34.43 N	24.11 W	-41.39	49.04
5360.00	19.80	158.80	5357.57	31.58 N	23.10 W	-38.66	45.38
5370.00	24.00	158.80	5366.85	28.10 N	21.75 W	-35.25	42.00
5380.00	28.30	158.10	5375.82	24.01 N	20.13 W	-31.21	43.11
5390.00	32.40	158.60	5384.45	19.31 N	18.27 W	-26.57	41.08
5400.00	36.70	158.60	5392.69	14.03 N	16.20 W	-21.38	43.00
5410.00	40.50	159.30	5400.50	8.21 N	13.96 W	-15.68	38.25
5420.00	43.80	160.40	5407.91	1.91 N	11.65 W	-9.59	33.81
5430.00	47.80	161.40	5414.88	4.86 S	9.31 W	-3.14	40.64
5440.00	52.10	161.90	5421.32	12.13 S	6.90 W	3.70	43.17
5450.00	56.20	161.40	5427.17	19.82 S	4.35 W	10.94	41.20
5460.00	60.70	160.90	5432.40	27.88 S	1.59 W	18.59	45.20
5470.00	64.70	159.80	5436.99	36.25 S	1.40 E	26.62	41.18
5480.00	68.20	156.60	5440.98	44.76 S	4.80 E	35.04	45.66
5490.00	71.70	153.70	5444.41	53.28 S	8.75 E	43.86	44.35
5500.00	75.00	151.00	5447.28	61.76 S	13.20 E	53.00	41.93
5510.00	77.60	147.60	5449.65	70.11 S	18.16 E	62.42	42.03
5520.00	79.10	143.20	5451.67	78.17 S	23.72 E	72.05	45.63
5530.00	80.30	139.30	5453.45	85.84 S	29.88 E	81.82	40.20
5540.00	82.80	137.00	5454.92	93.21 S	36.48 E	91.70	33.80
5566.00	91.20	134.00	5456.28	111.71 S	54.66 E	117.64	34.30
5580.66	90.60	133.00	5456.05	121.80 S	65.29 E	132.29	7.95
5612.47	88.80	131.10	5456.22	143.10 S	88.91 E	164.05	8.23
5644.19	89.10	133.00	5456.80	164.34 S	112.46 E	195.73	6.06
5675.95	88.90	131.90	5457.36	185.77 S	135.89 E	227.45	3.52
5707.05	88.20	131.20	5458.14	206.39 S	159.16 E	258.48	3.18
5738.80	88.90	129.80	5458.95	227.01 S	183.29 E	290.12	4.93
5770.52	89.30	129.50	5459.44	247.24 S	207.71 E	321.70	1.58
5802.28	90.00	128.90	5459.64	267.32 S	232.32 E	353.30	2.90
5834.06	90.60	129.30	5459.47	287.36 S	256.98 E	384.91	2.27
5865.73	90.40	127.90	5459.20	307.12 S	281.73 E	416.38	4.47
5897.46	91.10	127.00	5458.78	326.41 S	306.92 E	447.83	3.59

SPERRY-SUN DRILLING SERVICES
SURVEY DATA

Customer ... : MOBIL (UTAH)
Platform ... : RATHERFORD UNIT
Slot/Well .. : BA25/13-34 2A1B1

MEASURED DEPTH	ANGLE DEG	DIRECTION DEG	TVD	NORTHINGS FEET	EASTINGS FEET	VERTICAL SECTION	DOG LEG
5929.30	91.60	126.70	5458.03	345.50 S	332.39 E	479.34	1.83
5961.00	91.40	126.10	5457.20	364.30 S	357.90 E	510.67	1.99
5991.97	91.90	126.10	5456.31	382.54 S	382.91 E	541.26	1.61
6023.77	89.20	128.80	5456.00	401.87 S	408.15 E	572.77	12.01
6055.50	88.20	128.10	5456.72	421.60 S	432.99 E	604.29	3.85
6087.29	90.00	130.50	5457.22	441.73 S	457.59 E	635.91	9.44
6118.48	91.70	133.00	5456.76	462.49 S	480.85 E	667.05	9.69
6150.32	93.00	135.40	5455.45	484.67 S	503.66 E	698.85	8.57
6182.06	93.30	138.40	5453.71	507.81 S	525.31 E	730.52	9.48
6213.91	92.60	139.50	5452.07	531.80 S	546.20 E	762.26	4.09
6244.51	92.50	138.30	5450.71	554.83 S	566.29 E	792.75	3.93
6276.40	89.00	137.60	5450.29	578.51 S	587.65 E	824.59	11.19
6308.11	87.70	137.60	5451.21	601.91 S	609.02 E	856.26	4.10
6339.91	87.30	135.10	5452.59	624.90 S	630.95 E	888.02	7.95
6371.75	88.10	134.90	5453.87	647.39 S	653.44 E	919.83	2.59
6403.45	89.20	134.70	5454.62	669.72 S	675.93 E	951.52	3.53
6435.15	91.20	134.90	5454.51	692.06 S	698.42 E	983.22	6.34
6466.98	89.40	133.30	5454.34	714.21 S	721.28 E	1015.04	7.57
6498.68	90.40	133.00	5454.40	735.89 S	744.40 E	1046.73	3.29
6530.39	89.30	131.20	5454.48	757.15 S	767.93 E	1078.39	6.65
6562.12	89.70	130.50	5454.75	777.90 S	791.93 E	1110.04	2.54
6593.88	90.80	132.60	5454.62	798.96 S	815.70 E	1141.74	7.46
6625.76	90.90	132.50	5454.14	820.52 S	839.18 E	1173.59	0.44
6657.37	90.90	134.70	5453.65	842.31 S	862.07 E	1205.18	6.96
6689.23	89.30	132.10	5453.59	864.20 S	885.21 E	1237.02	9.58
6721.03	90.60	129.80	5453.62	885.04 S	909.23 E	1268.74	8.31
6752.85	90.40	128.60	5453.34	905.15 S	933.89 E	1300.40	3.82
6784.60	90.50	127.70	5453.09	924.76 S	958.85 E	1331.92	2.85
6816.36	90.50	127.00	5452.81	944.03 S	984.10 E	1363.39	2.20
6848.20	90.90	127.40	5452.43	963.28 S	1009.46 E	1394.94	1.78
6880.00	93.30	127.90	5451.26	982.69 S	1034.62 E	1426.45	7.71
6911.84	93.70	128.10	5449.32	1002.26 S	1059.66 E	1458.00	1.40
6943.23	93.20	126.80	5447.43	1021.31 S	1084.54 E	1489.06	4.43
6975.02	92.70	127.50	5445.79	1040.48 S	1109.84 E	1520.51	2.70
7006.74	90.30	128.20	5444.96	1059.94 S	1134.88 E	1551.97	7.88
7037.89	90.90	128.60	5444.64	1079.28 S	1159.29 E	1582.91	2.31
7068.84	92.30	128.90	5443.77	1098.65 S	1183.42 E	1613.66	4.63
7100.57	93.30	129.80	5442.22	1118.74 S	1207.92 E	1645.20	4.24

SPERRY-SUN DRILLING SERVICES
SURVEY DATA

Customer ... : MOBIL (UTAH)
Platform ... : RATHERFORD UNIT
Slot/Well .. : BA25/13-34 2A1B1

MEASURED DEPTH	ANGLE DEG	DIRECTION DEG	TVD	NORTHINGS FEET	EASTINGS FEET	VERTICAL SECTION	DOG LEG
7132.39	93.40	131.20	5440.36	1139.37 S	1232.08 E	1676.87	4.40
7164.13	91.60	131.60	5438.98	1160.34 S	1255.86 E	1708.51	5.81
7195.08	92.10	132.10	5437.98	1180.98 S	1278.90 E	1739.40	2.28
7226.89	91.80	134.00	5436.90	1202.68 S	1302.13 E	1771.17	6.04
7258.64	90.20	134.00	5436.34	1224.73 S	1324.97 E	1802.91	5.04
7290.36	89.10	135.40	5436.54	1247.04 S	1347.51 E	1834.63	5.61
7321.99	88.60	136.10	5437.17	1269.69 S	1369.58 E	1866.25	2.72
7353.77	88.10	136.90	5438.09	1292.74 S	1391.45 E	1898.00	2.97
7385.58	88.50	137.00	5439.03	1315.97 S	1413.15 E	1929.78	1.30
7417.31	88.70	136.90	5439.80	1339.15 S	1434.81 E	1961.48	0.70
7449.18	87.40	137.20	5440.89	1362.46 S	1456.51 E	1993.31	4.19
7480.93	86.90	137.60	5442.47	1385.81 S	1477.97 E	2025.00	2.02
7516.00	86.90	137.60	5444.36	1411.67 S	1501.58 E	2059.98	0.00

THE DOGLEG SEVERITY IS IN DEGREES PER 100.00 FEET.
N/E COORDINATE VALUES GIVEN RELATIVE TO WELL SYSTEM REFERENCE POINT.
TVD COORDINATE VALUES GIVEN RELATIVE TO WELL HEAD.
THE VERTICAL SECTION ORIGIN IS WELL HEAD.
THE VERTICAL SECTION WAS COMPUTED ALONG 135.00 (TRUE).
CALCULATION METHOD: MINIMUM CURVATURE.

* 7516 PROJECTED TO BIT, 5311 INTERPOLATED GYRO.
5320-5510 HAVE MAGNETIC INTERFERENCE, 5300 TIE-ON.
5320-5540 MWD SURVEYS, 6656 SIDETRACK POINT.

MUD REPORT

OPERATOR: MOBIL
WELL NAME: RATHERFORD UNIT #13-34 SE 1-C/1-B HORIZONTAL LATERAL LEG#2 & SIDETRACK

DATE	DEPTH	WT	VIS	PLS	YLD	GEL	pH	WL	CK	CHL	CA	SD	OIL	WTR
9/16/97	5321'	8.4	26	--	--	0/0	7.2	NC	NC	450	20	--	0%	100%
9/17/97	5323'	8.3	26	--	--	0/0	11.8	NC	NC	900	40	--	0%	100%
9/18/97	5327'	8.3	26	--	--	0/0	11.8	NC	NC	800	40	--	0%	100%
9/19/97	5365'	8.3	26	--	--	0/0	11.8	NC	NC	1200	40	--	0%	100%
9/20/97	5595'	8.5	26	--	--	0/0	11.6	NC	NC	18500	480	--	TR	100%
9/21/97	6087'	8.4	26	1	1	0/0	11.8	24	NC	19000	480	--	4%	96%
9/22/97	6598'	8.4	27	1	1	0/0	11.6	12.4	NC	24600	500	--	6%	94%
9/23/97	7230'	8.4	27	1	1	0/0	11.6	9.6	NC	25000	480	--	6%	94%
9/24/97	6590'	8.5	27	1	1	0/0	11.6	7.6	NC	29000	520	--	6%	94%
9/25/97	7116'	8.5	26	2	1	0/0	11.6	5.6	NC	38000	520	--	5%	95%
9/26/97	7381'	8.5	27	1	1	0/0	11.7	6.6	NC	37000	480	--	6%	94%

SAMPLE DESCRIPTIONS

OPERATOR: MOBIL
WELL NAME: RATHERFORD UNIT #13-34 SE 1-A/1-B HORIZONTAL LATERAL LEG #2

DEPTH	LITHOLOGY

5320.00 5330.00 "LS crm-tan-brn,crpxl-micxl,cln-dns,occ chk,v sl fos,dol,v sl anhy-ANHY xl-frac fl,tt,NFSOC,w/thn brn-gybrn,crpxl-micxl DOL,lmy,arg,tt,NFSOC-v thn blk dol carb SH & tan-brn-gybrn CHT frag"

5330.00 5340.00 "LS tan-brn,crm-wh,AA,w/v thn DOL AA,v rr SH & CHT AA"

5340.00 5350.00 "LS wh-tan,occ crm-gybrn,crpxl-micxl,arg,chk,anhy,dns,v sl chty,NFSOC,w/thn brn-gybrn,v shy ip,micxl,arg,lmy,tt DOL & dkgy-blk calc-sl dol occ carb SH incl-lams,rr scat blk-bf CHT frag"

5350.00 5360.00 "LS pred wh-crm-tan,AA,v dol,v slty ip,occ grdg to v lmy SLTST,w/thn DOL & SH AA,scat trnsl-bf,occ blk CHT"

5360.00 5370.00 "LS tan-brn,occ crm-wh-ltgybrn,crpxl-micxl,cln-dns,occ chk-arg,dol ip,v sl anhy,tt,NFSOC,grdg to v lmy,gybrn-brn,micxl,v shy,tt DOL,NFSOC,w/v thn dkgy-gy,calc,mica,v sl dol SH & scat ltbrn-gybrn-blk CHT "

5370.00 5380.00 "LS AA,bcmg pred arg,dol,dkbrn-brn,sl shy,tt,NFSOC w/incr dkbrn-brn-dkgybrn v shy DOL & dol SH AA,scat brn-dkbrn CHT frag"

5380.00 5390.00 "LS wh-crm,occ tan,chk,AA,grdg to v lmy ltgy-crm sl mica SLTST,w/v thn DOL & SH AA,v rr CHT frag"

5390.00 5400.00 "LS crm-wh-tan,ltgy,crpxl-micxl,arg-chk,v slty,dol ip,v sl fos,anhy,tt,NFSOC-grdg to v lmy,ltgy-crm,sl mica,v sl sdy SLTST,& v thn ltgy-gy SH & dkbrn-brn,crpxl,dns DOL NFSOC"

5400.00 5410.00 "SH dkbrnblk-blk,sft-frm,sbplty-sbblky,slty-sl arg,sl calc,carb,tr intbd LS & DOL AA"

5410.00 5420.00 "LS tan,crm-wh,occ m-ltgy-gybrn ip,crpxl-micxl,occ fxl,rthy/scat v chky plty prtgs,sl anhy,occ grdg to lmy SLTST,tt-tr intxl POR,rr scat bri yel FLOR,no vis STN,vp dif/tr res ring CUT"

5420.00 5430.00 "SH blk-dkbrnblk,sbblky-sbplty-plty,frm-sft,carb,calc-sl lmy ip,tr brit blky carb frag,sooty,w/scat LS AA"

5430.00 5440.00 "DOL tan-ltbrn,micxl-gran-micsuc,occ sl crpxl,rthy-sl slty/rr sdy strk,calc-sl lmy,occ grdg to dol LS,sl anhy/vrr xln ANHY incl,rr mic fos,fr-g intxl/tr ooc POR,fr-g bri yel FLOR,fr ltbrn STN,g slow stmg mlky CUT

5440.00 5450.00 "LS crm-wh,m-ltgy-gybrn,occ brn,crpxl-micxl,occ fxl,rthy/scat v chky plty prtgs,sl anhy,occ grdg to lmy SLTST,tt-tr intxl POR,rr scat bri yel FLOR,no vis STN,vp dif/tr res ring CUT"

5460.00 5470.00 "DOL AA,micxl-gran-micsuc,ooc-ool,sl crpxl-alg mat,pred GRNST-occ ooc/tr dns ool PCKST,calc-grdg to dol LS,sl anhy-rr xln ANHY incl-POR fl,tr mic fos,fr intxl-tr ooc-rr pp alg POR,FLOR-STN AA,fr-g slow stmg mlky CUT "

5470.00 5490.00 "DOL ltbrn-tan,gran-micsuc,crpxl-alg mat ip,pred GRNST-occ ool dns PCKST,calc-occ grdg to dol LS,sl anhy/tr xln ANHY incl-rr POR fl,tr mic fos,fr-g intxl/tr ooc POR,rr pp alg POR,g scat bri yel FLOR,fr ltbrn-tr brn STN,fr-g slow stmg mlky CUT"

DEPTH	LITHOLOGY

5490.00 5510.00 "DOL ltbrn-tan,brn,micxl-gran-micsuc,crpxl-alg mat,pred ooc-ool-sl oom GRNST,incr scat dns ool PCKST,calc-grdg to dol LS,sl anhy/tr xln ANHY incl-POR fl,tr mic fos,tt-fr intxl/tr ooc POR,fr mod bri yel FLOR,fr ltbrn/tr brn STN,fr-g slow stmg mlky CUT"

5510.00 5520.00 "DOL AA,crpxl-alg mat,sl gran-micsuc,pred dns-alg mat PCKST/tr sl ool-oom GRNST,calc-grdg to dol LS,anhy AA,tr mic fos,tt-tr intxl/rr pp alg-ooc POR,FLOR-STN AA,g fast stmg mlky CUT "

5520.00 5540.00 "DOL ltbrn-brn,occ crm-ltgybrn,tan,crpxl-micxl-gran,occ vfxl,pred dns alg mat PCKST/tr GRNST prtgs,rich LS cmt-occ grdg to dol LS,anhy-sl chky/tr POR fl & xln ANHY incl,v fos,tt-tr intxl/rr pp alg POR,FLOR AA,fr-g ltbrn-brn/rr blk STN,g fast stmg CUT"

5540.00 5550.00 "DOL AA,gran-micxl-crpxl,occ vfxl ip,pred PCKST AA/sl incr GRNST,incr chky plty PCKST frag,tt-tr intxl-rr ooc & pp alg POR,g bri yel FLOR,g ltbrn/tr brn & blk STN,g fast stmg mlky CUT"

5550.00 5566.00 "DOL brn-ltbrn,occ crm-ltgybrn,tan,micxl-gran,crpxl-alg mat,occ vfxl,pred dns alg mat PCKST-grdg to GRNST,decr chky plty PCKST,LS rich cmt-occ grdg to dol LS,fos,tr wh-trnsl CHT frag,anhy AA,incr POR AA,FLOR-STN AA,g fast stmg mlky CUT "

5566.00 5580.00 "TR BLK SH & PLTY LS FRAG AFTER TRIP/DOL ltbrn-brn,micxl-vfxl,occ crpxl,gran-micsuc ip,sl ool-pred alg GRNST,w/tt dns PKST frag,v sl anhy,LS rich cmt-grdg to v dol LS,v rr fos frag,fr-g intxl-alg POR,fr-g dull-bri yel FLOR,g ltbrn-brn STN,v rr spty blk dd o STN,fr-g mo fast-fast stmg CUT"

5580.00 5600.00 "LS brn-ltbrn,occ tan,micxl-vfxl,gran-micsuc,alg-sl ool GRNST,v rr scat PKST,v dol-DOL rich cmt-occ grdg to v lmy DOL,v rr CHT frag,anhy-rr xl-incl,scat fos frag,fr-g intxl-alg POR,fr-g bri-dull yel FLOR,fr-g brn STN,rr spty blk dd,fr-g mod fast-fast stmg CUT"

5600.00 5620.00 "LS AA,occ wh-crm,sl ool,v dol-grdg to v lmy alg DOL GRNST ip,scat wh-trnsl CHT frag,fr-g alg-fr intxl POR,fr-g bri-dull yel FLOR,fr ltbrn-brn STN,rr spty blk dd o STN,fr-g mod fast-fast stmg CUT"

5620.00 5630.00 "LS ltbrn-brn,crpxl-vfxl,gran-micsuc,pred alg GRNST,sl incr LS PKST,v rr scat ool,v dol AA,fr intxl-tr alg POR,g bri-dull yel FLOR,fr ltbrn-brn STN,g mod fast CUT"

5630.00 5640.00 "LS AA,w/rr scat DOL AA,POR-FLOR-STN AA,fr slow-tr mod fast CUT"

5640.00 5650.00 "LS AA,micxl-vfxl,gran-micsuc,alg-sl ool GRNST,v rr scat PKST,v dol-DOL rich cmt-occ grdg to v lmy DOL,anhy-rr xl-incl,scat fos frag,POR-FLOR-STN-CUT AA"

5650.00 5660.00 "LS AA,w/sl incr scat DOL AA,POR-FLOR-STN AA,fr-g slow-fast stmg mlky CUT"

5660.00 5680.00 "LS ltbrn-crm-wh,tan,occ brn,micxl-crpxl-alg,vfxl-gran,sl micsuc,pred dns alg mat PCKST/tr DOL cmt,tr GRNST frag,occ grdg to lmy DOL,anhy-chky/tr POR fl,tr xln ANHY frag,tr trnsl-wh CHT,fos,tt-tr intxl-rr pp alg POR,fr even dull yel FLOR,STN-CUT AA"

5680.00 5700.00 "LS AA,pred dns alg mat PCKST/rr GRNST frag,tr DOL cmt-occ grdg to lmy DOL,anhy-chky/tr POR fl,tr xln ANHY frag,tr trnsl-wh CHT,fos-vrr ool,tt-tr intxl-vrr pp alg POR,fr even dull yel FLOR,fr-g ltbrn-rr brn & blk STN,g-fr mod fast-fast stmg mlky CUT"

DEPTH	LITHOLOGY

5700.00 5720.00 "LS ltbrn-crm-tan,occ brn,wh,micxl-crpxl-alg,occ vfxl,pred PCKST AA/tr DOL cmt,rr GRNST frag,occ grdg to lmy DOL,anhy-chky/tr POR fl,tr xl ANHY frag,tr CHT AA,fos,tt-tr intxl POR,fr even dull yel FLOR,fr ltbrn/tr brn & blk STN,fr dif/tr slow stmg mlky CUT"

5720.00 5740.00 "LS ltbrn-tan-crm,occ wh,brn,micxl-alg-crpxl,sl gran-vfxl,pred dns alg mat PCKST-occ grdg to GRNST,tr DOL cmt-incr grdg to lmy DOL,anhy-chky AA,tr CHT AA,fos,tt-tr intxl POR/occ fl,g even dull yel FLOR,g-fr ltbrn/tr brn & blk STN,g slow-tr fast stmg mlky CUT"

5740.00 5760.00 "LS AA,micxl-alg-crpxl,occ vfxl-gran,pred alg mat PCKST,occ dns/tr crpxl incl & DOL cmt,occ grdg to lmy DOL ip,tr GRNST prtgs-frag,sl anhy/rr xl ANHY incl,tr CHT AA,rr qtz rhmb xl,fos,tt-tr intxl-grdg to alg POR,fr even mod mod bri yel FLOR,STN & CUT AA"

5760.00 5770.00 "LS AA,pred PCKST AA,bcmg incr dns,tr DOL cmt-occ grdg to lmy DOL,anhy/rr xl incl,tr crpxl incl,rr qtz AA,fos,POR-FLOR-STN AA,g slow stmg mlky CUT"

5770.00 5780.00 "LS AA,pred dns alg mat PCKST,rr GRNST prtgs,tr DOL cmt-occ grdg to lmy DOL,anhy AA/tr chky-anhy frag,rr smky qtz,POR-FLOR-STN-CUT AA"

5780.00 5790.00 "LS AA,pred dns alg mat PCKST/DOL cmt,occ grdg to lmy DOL,tr GRNST strk-prtgs,tr scat chky-anhy frag,rr qtz & CHT AA,fr-g intxl-tr pp alg POR,g even mod bri-tr bri yel FLOR,g-fr ltbrn-brn STN,rr blk STN,g mod fast stmg mlky CUT"

5790.00 5800.00 "LS AA/incr scat wh-ltgy chky plty prtgs,POR-FLOR-STN AA,g fast-mod fast stmg mlky CUT"

5800.00 5820.00 "LS tan-crm,ltbrn,occ wh,brn,ltgybrn,micxl-crpxl-alg,pred dns alg PCKST/DOL cmt,incr grdg to lmy DOL,tr scat chky plty frag,anhy/tr POR fl & xln incl,tr CHT AA,fos,tt-tr intxl POR,decr FLOR AA,STN AA/incr scat blk STN'g fast stmg-fr blooming mlky CUT"

5820.00 5840.00 "LS AA,pred dns alg mat PCKST/tr DOL cmt,grdg to lmy DOL,incr scat chky plty frag,anhy/tr POR fl-vrr xl incl,tr wh-trnsl CHT frag,fos-vrr CRIN,tt-tr intxl POR,fr scat mod bri yel FLOR,fr ltbrn-tr brn/scat blk dd o STN,g slow stmg mlky CUT"

5840.00 5860.00 "LS tan-crm,ltbrn,occ wh,brn,ltgybrn,micxl-crpxl-alg,pred PCKST AA/DOL rich cmt-grdg to lmy DOL,tr scat chky plty frag,anhy/tr POR fl-incl,tr CHT AA,fos-tr ool-rr CRIN,POR AA,fr scat dull-mod bri FLOR,STN AA,g slow stmg mlky CUT"

5860.00 5880.00 "LS tan-crm-wh,occ ltbrn,ltgybrn,micxl-crpxl,occ vfxl,pred dns-tr scat chky plty PCKST,tr fos-alg frag,anhy/rr trnsl xln ANHY frag,rr tan-trnsl CHT incl,tt-tr intxl POR/anhy-chky fl,fr dull/scat mod bri yel FLOR,tr-fr ltbrn STN,fr-tr v slow dif CUT"

5880.00 5900.00 "LS AA,crpxl-micxl,occ vfxl,pred dns-chky plty PCKST,rr fos-alg frag,anhy/rr trnsl xln ANHY frag,tr tan-trnsl CHT incl-frag,tt-tr intxl POR/anhy-chky fl,fr dull/scat mod bri yel FLOR,tr ltbrn/vrr blk STN,fr-tr v slow dif CUT"

5900.00 5920.00 "LS tan-crm-wh,tr ltbrn,crpxl-micxl,tr vfxl,pred scat dns-chky plty PCKST/occ fos-alg frag,anhy/rr trnsl xln ANHY frag,rr tan-trnsl CHT incl,tr ool incl,tt-tr intxl POR/anhy-chky fl,fr dull/scat mod bri yel FLOR,tr ltbrn /rr blk STN,fr v slow dif CUT"

DEPTH	LITHOLOGY

5920.00 5940.00 "LS ltbrn-tan,occ brn,crm-wh,micxl-crpxl-alg,vfxl-gran,ool ip,pred PCKST AA/tr DOL cmt,tr chkt plty frag,occ grdg to lmy DOL,anhy/tr POR fl-rr xln frag,tr trnsl-wh CHT,fos-ool incl,tt-tr intxl POR,fr even dull-mod bri yel FLOR,STN AA,g mod fast stmg CUT"

5940.00 5960.00 "LS ltbrn-brn,occ crm-wh,brn-crm mot,crpxl-vfxl,occ gran-micsuc,dns,chk ip,intbd alg GRNST-PKST,rr trnsl-wh-mot CHT frag,anhy-rr xl-incl,dol-DOL rich cmt,tt-fr alg-intxl POR,fr-mg dull-bri yel FLOR,tr-fr ltbrn-rr spty blk STN,fr slow-mod fast stmg CUT"

5960.00 5980.00 "LS AA,incr dol PKST,w/thn intbd GRNST,incr ANHY xl-incl,scat trnsl-wh occ mot CHT frag,scat Crin fos-fos frag,v sl ool,tt-fr intxl-alg POR,mfr dull-tr bri yel FLOR,tr-fr ltbrn-brn STN,rr-tr blk dd o STN,tr-fr slow-mod fast stmg CUT"

5980.00 6000.00 "LS tan-brn,crm-wh ip,occ mot,crpxl-vfxl,dns-gran,occ micsuc,intbd alg GRNST & v fos PKST,v rr ool-abnt fos hash,scat bf-wh CHT frag,scat ANHY xl-incl,tt-fr intxl-alg POR,tr-fr dull-bri yel FLOR,fr ltbrn-brn STN,rr spty blk dd o STN,fr-g slow-fast CUT"

6000.00 6010.00 "LS crm-tan,wh,crpxl-vfxl,pred sl ply fos PKST,w/thn alg GRNST,v sl fos,chty-tr CHT frag,AA,decr POR-FLOR-STN-CUT"

6010.00 6020.00 "LS AA,incr alg GRNST,tt-g intxl-alg POR,fr dull-bri yel FLOR,tr-fr ltbrn-brn-tr blk STN,fr slow-mod fast stmg CUT"

6020.00 6040.00 "LS tan-brn,occ crm-wh,crpxl-vfxl,gran-micsuc ip,occ plty-chk,pred alg GRNST,decr amnt PKST,dol-DOL rich cmt,rr ANHY xl-incl,scat CHT frag,v fos-fos hash,tt-g intxl-alg POR,fr-g dull-bri yel FLOR,fr ltbrn-brn STN,rr spty blk dd o STN,fr-g slow-fast CUT"

6040.00 6060.00 "LS tan-ltbrn,occ brn,wh-crm ip,crpxl-vfxl,rr plty-chk,pred alg GRNST,scat fos PKST,scat trnsl-wh-occ bf CHT frag,rr ANHY xl-incl,v rr ool,fr-g alg-intxl POR,fr-g dull-bri yel FLOR,fr-g ltbrn-brn-rr blk STN,fr-g slow-mod fast stmg CUT"

6060.00 6080.00 "LS AA,sl incr v fos-plty-chk PKST,g alg GRNST,fr-g alg-intxl POR,fr-g dull-bri yel FLOR,fr-g brn STN,spty blk dd o STN,fr-g slow-fast stmg CUT"

6080.00 6100.00 "LS tan-ltbrn,occ brn,wh-crm ip,crpxl-vfxl,pred alg GRNST,rr scat plty-chk v fos PKST,scat trnsl-wh-occ bf CHT frag,rr ANHY xl-incl,v rr ool,fr-g alg-intxl POR,fr-g dull-bri yel FLOR,fr-g ltbrn-brn STN,rr blk dd o STN,fr-g slow-mod fast stmg CUT"

6100.00 6120.00 "LS AA,incr ANHY xl-incl,scat wh-trnsl-bf CHT frag,scat plty-chk ip dns v fos PKST,POR-FLOR-STN-CUT AA"

6120.00 6130.00 "LS AA,incr plty-chk ip dns v fos-Crin fos PKST,decr POR-FLOR-STN-CUT"

6130.00 6150.00 "LS tan-ltbrn,occ brn,wh-crm ip,crpxl-vfxl,pred alg GRNST,tr-fr amnt plty-chk v fos PKST,tr trnsl-wh-occ bf CHT frag,rr ANHY xl-incl,v rr ool,tr-g alg-intxl POR,tr-g dull-bri yel FLOR,fr-g ltbrn-brn STN,rr blk dd o STN,tr-fr g slow-mod fast stmg CUT"

6150.00 6160.00 "LS AA,pred intbd alg GRNST & dns fos PKSTincr ANHY xl-incl,scat wh-trnsl-bf CHT frag,scat Crin fos,fr-g POR-FLOR-STN-CUT"

DEPTH	LITHOLOGY

6160.00 6180.00 "LS tan-ltbrn,occ brn,wh-crm ip,crpxl-vfxl,intbd alg GRNST & plty-chk v fos-sl Crin PKST,tr trnsl-wh-occ bf CHT frag,rr ANHY xl-incl,v rr ool,tr-g alg-intxl POR,tr-g dull-bri yel FLOR,fr-g ltbrn-brn STN,rr blk dd o STN,tr-fr g slow-mod fast stmg CUT"

6180.00 6190.00 "LS AA,incr dns fos PKST,incr ANHY xl-incl,sl incr scat wh-trnsl-bf CHT frag,scat Crin fos,decr POR-FLOR-STN-CUT"

6190.00 6200.00 "LS ltbrn-brn,occ crm-wh-tan,crpxl-micxl,occ vfxl-gran,sl micsuc,pred v fos sl Crin PKST,scat intbd alg GRNST,tr trnsl-bf-wh CHT frag,anhy,DOL rich cmt,tr-fr intxl-alg POR,mfr dull-bri yel FLOR,tr-fr brn-rr blk STN,tr g mod fast CUT"

6200.00 6220.00 "LS crm-wh-tan,occ ltbrn-brn,crpxl-micxl,occ vfxl-gran,sl micsuc,pred v fos sl Crin plty-chk PKST,scat intbd alg GRNST,tr trnsl-bf-wh CHT frag,anhy,DOL rich cmt,tr intxl-alg POR,tr dull-rr bri yel FLOR,tr brn-rr blk STN,tr fr-g slow-mod fast CUT"

6220.00 6240.00 "LS crm-wh-tan,occ ltbrn-brn,pred v fos sl Crin plty-chk PKST w/scat intbd alg GRNST,AA,DOL rich cmt-scat tr ltbrn-gybrn micxl DOL frag,rr-tr intxl-alg POR,tr dull-rr bri yel FLOR,tr brn-rr blk STN,tr fr slow-mod fast CUT"

6240.00 6250.00 "LS tan-ltbrn,occ brn,crpxl-vfxl,pred alg GRNST,scat wh-crm-tan plty-chk v fos PKST,scat trnsl-wh-occ bf CHT frag,rr ANHY xl-incl,v rr ool,fr-g alg-intxl POR,fr-g dull-bri yel FLOR,fr-g ltbrn-brn STN,rr blk dd o STN,fr-g slow-mod fast stmg CUT"

6250.00 6260.00 "LS crm-wh-tan,occ ltbrn-brn,pred v fos sl Crin plty-chk PKST w/scat intbd alg GRNST,AA,scat CHT frag AA,rr-fr intxl-alg POR,fr dull-tr bri yel FLOR,rr-tr brn-rr blk STN,tr fr slow-mod fast CUT"

6260.00 6280.00 "LS brn,ltbrn-tan,occ crm-ltgybrn-wh,micxl-crpxl-alg,gran,dns alg mat GRNST/DOL cmt,grdg to lmy DOL,intbd dns ool PCKST,anhy/rr xln incl-tr POR fl,fos-tr ool incl-rr CRIN,rr rhmb qtz xl,tt-tr intxl POR,FLOR AA,g brn/tr blk STN,g slow stmg mlky CUT"

6280.00 6290.00 "LS AA,incr DOL cmt-grdg to lmy DOL,rr scat wh-trnsl CHT fragPOR-FLOR-STN-CUT AA"

6290.00 6300.00 "LS AA,pred dns alg-sl ool PCKST,tr scat chky plty frag,rr GRNST AA,tr CHT AA,POR-FLOR AA,fr-g ltbrn/tr brn-rr blk STN,CUT AA"

6300.00 6320.00 "DOL dkbrn-brn,vfxl-micsuc,sl crpxl,DOL GRNST,calc-occ grdg to dol LS,dns,rr xln ANHY incl,tt-tr intxl POR,g-fr bri yel FLOR,g brn-dkbrn/blk dd o STN,g fast stmg mlky CUT,intbd in dns sl alg LS PCKST-occ grdg to GRNST,POR-FLOR-STN-CUT AA"

6320.00 6340.00 "LS tan-ltbrn,occ crm-wh,crpxl,micxl-alg,sl gran,pred dns PCKST/occ alg mat GRNST,tr DOL cmt,intbd/dns DOL AA,anhy AA,tr scat trnsl-wh CHT frag,fos-tr ool-vrr CRIN,tt-tr intxl POR,fr even dull yel FLOR,fr-g ltbrn-tr brn-rr blkSTN,g slow stmg mlky CUT"

6340.00 6360.00 "LS ltbrn-tan-crm,occ wh,micxl-crpxl-alg,sl gran,pred dns alg GRNST-occ grdg to PCKST/tr DOL cmt,vrr dns DOL GRNST AA,incr anhy/POR fl-rr xl,tr CHT AA,rr qtz AA,fos-tr ool & CRIN,tt-tr intxl POR,FLOR AA,fr-g ltbrn-rr brn-vrr blk STN,g slow stmg mlky CUT"

6360.00 6380.00 "LS AA,pred dns alg mat GRNST-occ grdg to PCKST,DOL rich cmt-occ grdg to lmy DOL,vrr scat dns DOL GRNST frag,anhy/tr POR fl & rr xln frag,sl chky,rr scat trnsl-wh CHT frag-incl,vrr qtz AA,fos-tr ool-vrr CRIN,POR-FLOR-STN AA,g slow-mod fast stmg mlky CUT"

DEPTH	LITHOLOGY

6380.00 6400.00 "LS AA,micxl-crpxl-alg,gran,pred GRNST AA-occ grdg to PCKST,tr DOL cmt-occ grdg to lmy DOL,vrr DOL GRNST frag AA,anhy/POR fl-rr xl,tr CHT AA,vrr qtz AA,fos-tr ool & CRIN,tt-tr intxl POR,g mod bri yel FLOR,fr-g ltbrn-brn STN,g mod fast-slow stmg mlky CUT"

6400.00 6410.00 "LS AA,pred GRNST AA,tr scat dns PCKST,DOL cmt-occ grdg tolmy DOL,anhy/tr scat xln -POR fl,rr smky rhmb qtz xl,rr tan CHT,fos AA,POR-FLOR-STN-CUT AA"

6410.00 6420.00 "LS AA,pred alg mat GRNST-occ grdg to PCKST,decr dns PCKST frag,tr DOL cmt-occ grdg to lmy DOL,tr scat DOL frag AA,incr CHT AA,sl anhy/rr xln-POR fl,POR-FLOR-STN-CUT AA"

6420.00 6430.00 "DOL dkbrn-brn,vfxl-micsuc,sl crpxl,DOL GRNST,calc-occ grdg to dol LS,dns,rr xln ANHY incl,tt-tr intxl POR,g-fr bri yel FLOR,g brn-dkbrn/blk dd o STN,g fast stmg mlky CUT"

6430.00 6440.00 "LS AA,incr scat CHT AA,w/scat dns DOL GRNST AA,POR-FLOR-STN-CUT AA"

6440.00 6450.00 "LS AA,pred alg mat GRNST/incr dns PCKST,sl incr DOL cmt,incr scat DOL GRNST frag AA,tr CHT AA,fos/vrr ool,tt-tr intxl POR/tr anhy fl,FLOR-STN AA,g-fr slow stmg mlky CUT"

6450.00 6460.00 "LS AA,w/scat dns DOL GRNST AA,POR-FLOR-STN-CUT AA"

6460.00 6480.00 "LS AA,micxl-crpxl-alg,gran,pred GRNST AA-occ grdg to PCKST,tr DOL cmt-occ grdg to lmy DOL,incr DOL GRNST frag AA,sl anhy/POR fl-rr xl,tr CHT AA,fos-tr ool & CRIN,tt-tr intxl POR,g mod bri yel FLOR,fr-g ltbrn-brn STN,g slow stmg mlky CUT"

6480.00 6500.00 "DOL dkbrn-brn,vfxl-micsuc,sl crpxl,DOL GRNST,calc-occ grdg to dol LS,dns,tt-fr intxl POR,g-fr bri yel FLOR,g brn-dkbrn/blk dd o STN,g fast stmg mlky CUT,intbd in dns sl alg LS GRNST-occ grdg to PCKST,POR-FLOR-STN-CUT AA"

6500.00 6510.00 "DOL dkbrn-brn,vfxl-micsuc,sl micxl,DOL GRNST,sl calc-occ grdg to dol LS,sl dns,tt-tr intxl POR,g-fr bri yel FLOR,g brn-dkbrn/blk dd o STN,g fast stmg mlky CUT,w/ scat LS AA "

6510.00 6530.00 "LS AA,pred alg mat GRNST-grdg to dns alg PCKST,tr DOL cmt-occ grdg to lmy DOL,sl incr anhy/POR fl,tr trnsl-wh CHT,fos/vrr ool,tt-tr intxl PORg even dull-mod bri yel FLOR,STN AA,g-fr slow stmg mlky CUT,w/ scat DOL GRNST AA,POR-FLOR-STN-CUT AA"

6530.00 6540.00 "DOL AA,DOL GRNST,sl calc-occ grdg to dol LS,sl dns,tt-fr intxl POR,g-fr bri yel FLOR,g brn-dkbrn/blk dd o STN,g fast stmg mlky CUT,w/ scat LS AA "

6540.00 6560.00 "DOL m-dkbrn,brn,micsuc-vfxl,DOL GRNST,occ sl dns,sl calc-occ grdg to dol LS ip,intbd w/ltbrn-tan LS GRNST,tr scat alg mat LS GRNST,vrr dns ool-alg LS PCKST,scat wh-trnsl CHT frag,sl anhy/rr xln frag,g intxl POR,g bri yel FLOR,g brn/tr blk STN,CUT AA"

6560.00 6580.00 "LS ltbrn,occ tan,crm-wh,vfxl-gran-micxl,micsuc,occ crpxl,LS GRNST/tr DOL cmt,tr scat sl dns alg mat GRNST-occ grdg to PCKST,sl anhy/tr POR fl-rr xln,tr scatwh-trnsl CHT frag,fr-tr intxl POR,g ltbrn STN,g even mod bri yel FLOR,g mod fast-fast stmg CUT"

6580.00 6600.00 "DOL m-dkbrn,brn,micsuc-vfxl,DOL GRNST,occ sl dns,sl calc-occ grdg to dol LS ip,intbd w/LS GRNST AA,sl incr scat alg mat LS GRNST,tr-rr dns ool-alg LS PCKST,scat CHT AA,sl anhy/rr xln frag,g-fr intxl POR,g bri yel FLOR,g brn/tr blk STN,CUT AA"

DEPTH	LITHOLOGY

6600.00 6610.00 "LS ltbrn-brn,crpxl-vfxl,occ gran-micsuc,pred alg GRNST,w/tr dns fos PKST,DOL rich cmt,thn intbd DOL grnst AA,scat trnsl-bf CHT frag,v rr scat Crin fos,fr-g intxl-tr alg POR,fr-g dull-bri yel FLOR,fr ltbrn-rr blk STN,fr-g slow-mod fast stmg CUT"

6610.00 6630.00 "LS AA,sl incr tan-crm LS PKST,sl incr m-dkbrn-brn micxl-vfxl,occ gran-micsuc DOL GRNST w/tr LS cmt-thn LS incl,sl decr intxl-sl alg POR,fr-g dull-bri yel FLOR,fr ltbrn-brn-v rr blk STN,fr g mod fast stmg CUT"

6630.00 6640.00 "LS & intbd DOL AA,scat tt LS PKST frag,tr wh-trnsl ool CHT frag,fr-g intxl-tr alg POR,fr-g dull-bri yel FLOR,fr-g ltbrn-brn-rr spty blk dd o STN,fr-g mod fast-fast stmg CUT"

6640.00 6660.00 "LS ltbrn-brn,tan-crm ip,crpxl-vfxl,occ gran-micsuc,pred alg GRNST,w/tr dns fos PKST,DOL rich cmt-thn intbd mbrn DOL GRNST AA,tr wh-bf-trip CHT frag,v rr Crin fos,fr-g intxl-tr alg POR,fr-g dull-bri yel FLOR,fr ltbrn-rr blk STN,fr-g slow-mod fast stmg CUT"

6660.00 6680.00 "LS AA,pred sl alg-alg LS GRNST & thn tan-ltbrn sl fos dns LS PKST,w/intbd DOL m-dkbrn,brn,micsuc-vfxl,DOL GRNST,sl alg,occ lmy-occ grdg to dol LS ip,tr wh-bf ool CHT frag,sl anhy-tr xl-incl,g-fr intxl-rr alg POR,g bri yel FLOR,g brn-rr blk STN,g fast CUT"

6680.00 6700.00 "LS GRNST & tr LS PKST AA,scat wh-trnsl ool CHT frag,w/intbd DOL GRNST AA,fr-g POR-FLOR-STN-CUT AA"

6700.00 6720.00 "LS ltbrn-brn,tan-crm ip,crpxl-vfxl,occ gran-micsuc,pred dns fos-sl chk PKST w/intbd GRNST,DOL rich cmt-thn intbd mbrn sl alg DOL GRNST,tr wh-bf-trip CHT frag,tr-fr intxl-rr alg POR,fr-g dull-bri yel FLOR,tr ltbrn-rr blk STN,tr g slow-mod fast stmg CUT"

6720.00 6730.00 "LS AA,incr brn,micxl-vfxl sl alg GRNST,decr LS PKST,incr wh-trnsl-clr occ trip CHT frag,incr intbd DOL GRNST,incr POR-FLOR-STN-CUT"

6730.00 6740.00 "LS pred brn,occ mbrn sl alg dol GRNST,tr-tr sl fos anhy PKST,incr brn-mbrn micxl-vfxl gran lmy DOL GRNST,scat Crin fos,fr-g intxl-v rr alg POR,fr-g dull-bri yel FLOR,fr ltbrn-brn STN,v rr spty blk dd o STN,fr-g mod fast-fast stmg CUT"

6740.00 6770.00 "LS ltbrn-brn,tan-crm ip,crpxl-vfxl,occ gran-micsuc,intbd sl alg GRNST & dns fos-sl chk PKST,DOL rich cmt-w/thn intbd mbrn sl alg DOL GRNST,tr wh-bf CHT frag,fr-g intxl-rr alg POR,fr-g dull-bri yel FLOR,fr ltbrn-rr blk STN,fr-g slow-mod fast stmg CUT"

6770.00 6800.00 "LS AA,pred intbd dol sl alg LS GRNST & lmy DOL GRNST,scat thn sl fos LS PKST incl,scat trnsl-wh-bf mot occ trip CHT frag,v rr Crin fos,fr-g intxl-sl alg POR,fr-g dull-bri yel FLOR,fr-g lt-dkbrn STN,v rr blk dd o STN,fr-g slow-fast stmg CUT"

6800.00 6810.00 "LS & DOL AA,scat Crin fos,scat wh-trnsl-bf mot sl ool CHT frag,POR-FLOR-STN-CUT AA"

6810.00 6830.00 "LS ltbrn-brn,tan-crm ip,crpxl-vfxl,occ gran-micsuc,intbd sl alg GRNST & dns fos-sl chk PKST,DOL rich cmt-w/thn intbd mbrn sl alg DOL GRNST,tr wh-bf CHT frag,fr-g intxl-rr alg POR,fr-g dull-bri yel FLOR,fr ltbrn-rr blk STN,fr-g slow-mod fast stmg CUT"

6830.00 6840.00 "LS & DOL AA,scat alg mat,scat Crin fos,sl incr scat wh-trnsl-bf mot sl ool CHT frag,POR-FLOR-STN-CUT AA"

DEPTH	LITHOLOGY

6840.00 6860.00 "DOL brn-mbrn,micxl-vfxl,gran-micsuc,pred sl lmy GRNST,tr alg mat,w/intbd sl dol LS GRNST & scat thn tt sl fos PKST,rr Crin fos,scat wh-tan-gy ool CHT frag,tr-g intxl-v rr alg POR,fr dull-rr bri yel FLOR,fr-g brn-rr blk STN,tr-fr g slow-fast stmg CUT"

6860.00 6880.00 "DOL & LS AA,sl incr LS GRNST,decr CHT frag,tr alg mat,scat Crin fos,POR AA,incr FLOR-STN-CUT"

6880.00 6900.00 "LS ltbrn-brn,tan-crm ip,crpxl-vfxl,occ gran-micsuc,intbd sl alg GRNST & dns fos-sl chk PKST,DOL rich cmt-w/thn intbd mbrn sl alg DOL GRNST,tr wh-bf CHT frag,fr-g intxl-rr alg POR,fr-g dull-bri yel FLOR,fr ltbrn-rr blk blk STN,fr-g slow-mod fast stmg CUT"

6900.00 6920.00 "LS AA,pred sl alg GRNST & w/dns fos-sl chk PKST,DOL rich cmt-w/thn intbd mbrn sl alg DOL GRNST,tr wh-bf CHT frag,fr-g intxl-rr alg POR,fr-g dull-bri yel FLOR,fr ltbrn-rr blk STN,fr-g slow-mod fast stmg CUT"

6920.00 6940.00 "LS AA,incr sl dol fos anhy PKST,sl incr sl lmy-lmy DOL GRNST,incr trnsl-wh-bf occ mot CHT frag,rr scat Crin fos,decr intxl-v rr alg POR,tr-fr dull-bri yel FLOR,tr-fr ltbrn-brn STN,v rr blk dd o STN,fr g slow-mod fast stmg CUT"

6940.00 6960.00 "LS ltbrn-brn,tan-crm ip,crpxl-vfxl,occ gran-micsuc,intbd sl alg GRNST & dns fos-sl chk PKST,DOL rich cmt-w/thn intbd mbrn sl alg DOL GRNST,tr wh-bf CHT frag,fr-g intxl-rr alg POR,fr-g dull-bri yel FLOR,fr ltbrn-rr blk STN,fr-g slow-mod fast stmg CUT"

6960.00 6980.00 "DOL m-dkbrn,occ ltbrn,dkbrnblk,micxl-vfxl-occ micsuc,gran,pred DOL GRNST,sl-occ v dns,calc-occ grdg to dol LS ip,tt-fr intxl POR,g even mod bri/tr bri yel FLOR,g brn-dkbrn/occ blk dd o STN,g fast stmg-sl blooming mlky CUT,intbd/LS GRNST AA"

6980.00 7000.00 "LS ltbrn-tan-crm,occ mbrn,vfxl-gran-micxl,crpxl-occ alg,pred LS GRNST/tr intbd dns PCKST,DOL rich cmt-occ grdg to lmy DOL,sl anhy/rr xl incl,scat wh-trnsl-rr dkbrn CHT frag,fr-g intxl-rr alg POR,g even mod bri yel FLOR,fr tlbrn STNg mod fast stmg CUT"

7000.00 7020.00 "LS AA,incr crpxl,pred alg-occ ool LS GRNST/DOL rich cmt-occ grdg to lmy DOL,incr scat-intbd dns/occ ltgy-ltgybrn-wh chky plty PCKST frag,incr scat wh-trnsl CHT/tr ool incl,tt-tr intxl/rr alg POR,FLOR-STN AA,g fast dif/tr slow stmg mlky CUT"

7020.00 7040.00 "LS tan-ltbrn,occ crm-wh-ltgybrn,gran-vfxl-alg,crpxl,pred alg mat GRNST/tr scat chky dns-rr plty PCKST,DOL rich cmt-occ grdg to lmy DOL,sl anhy/rr xl ANHY frag,tr tan-trnsl-wh CHT,rr ool incl & CRIN,POR AA,g even bri yel FLOR,g brn-ltbrn STN,g slow CUT"

7040.00 7060.00 "DOL m-dkbrn,ltbrn,occ dkbrnblk,micxl-vfxl-micsuc,gran,pred DOL GRNST,sl-occ v dns,calc-occ grdg to dol LS,tt-fr intxl POR,g even mod bri/tr bri yel FLOR,g brn-dkbrn/tr blk dd o STN,g fast stmg mlky CUT,intbd/LS GRNST AA"

7060.00 7080.00 "LS tan-ltbrn,crm-wh,occ brn,crpxl-vfxl-micxl,alg,pred sl alg GRNST/tr DOL cmt-occ grdg to lmy DOL,scat dns PCKST,sl chky-anhy/rr xl frag,scat trnsl-wh CHT,tt-tr intxl POR,g even bri yel FLOR,g ltbrn-brn/rr blk STN,g fast stmg mlky CUT,w/DOL GRNST AA"

7080.00 7100.00 "LS AA,pred GRNST AA/DOL rich cmt-grdg to lmy DOL,scat dns crpxl PCKST frag-incl,rr chky plty frag,scat wh-trnsl CHT frag,vrr smky rhmb qtz xl incl,sl anhy/rr xln ANHY frag-incl,vrr ool incl,tt-fr intxl POR,FLOR-STN-CUT AA,sl decr DOL GRNST AA"

DEPTH	LITHOLOGY

7100.00 7120.00 "DOL m-dkbrn,occ dkbrnblk,micxl-vfxl-micsuc,gran,pred DOL GRNST,sl dns,calc-occ grdg to dol LS,tr-fr intxl POR,g even mod bri-tr bri yel FLOR,g brn-dkbrn/tr blk dd o STN,g fast stmg mlky CUT,w/alg LS GRNST AA"

7120.00 7140.00 "LS tan-ltbrn,crm-wh,occ brn,vfxl-micxl,alg,crpxl,pred GRNST intbd/dns PCKST incl-frag,sl alg,tr DOL rich cmt-occ grdg to lmy DOL,sl chky-anhy/vrr xl frag,scat CHT AA,rr CRIN fos,fr intxl-rr alg POR,FLOR AA,g ltbrn-brn/rr blk STN,g fast stmg mlky CUT"

7140.00 7150.00 "LS AA.pred GRNST intbd/crpxl PCKST & DOL GRNST AA,sl anhy/tr scat xln ANHy frag,sl chky/rr plty prtgs,scat CHT AA,rr CRIN fos,POR-FLOR-STN-CUT AA"

7150.00 7160.00 "LS AA,alg LS GRNST/intbd-frag dns PCKST AA,scat DOL GRNST AA,sl anhy AA,rr chky plty frag,fr intxl-rr alg POR,FLOR AA,g ltbrn-fr brn/tr blk STN,CUT AA"

7160.00 7180.00 "DOL m-dkbrn,occ dkbrnblk,vfxl-micsuc-gran,pred DOL GRNST,sl dns,intbd/LS GRNST & occ dns PCKST,grdg to dol LS,tr-fr intxl POR,g even mod bri-tr bri yel FLOR,g brn-dkbrn/tr blk dd o STN,g fast stmg mlky CUT,w/pred LS GRNST AA"

7180.00 7190.00 "LS AA,pred GRNST sl alg mat-intbd/PCKST & DOL GRNST AA,DOL rich cmt-occ grdg to lmy DOL,g-fr intxl/tr pp alg POR,g even bri yel FLOR,g ltbrn-fr brn/tr blk STN,g mod fast stmg mlky CUT"

7190.00 7210.00 "LS tan-ltbrn,crm-wh,occ brn,vfxl-micxl,alg,crpxl,pred GRNST intbd/PCKST & GRNST DOL AA,rr chky plty frag,tr DOL rich cmt-occ grdg to lmy DOL,sl chky-anhy/vrr xl frag,scat CHT AA,fr intxl/tr pp alg POR,FLOR AA,g ltbrn-brn/rr blk STN,g fast stmg mlky CUT"

7210.00 7220.00 "LS AA,LS GRNST intbd PCKST & DOL GRNST AA,DOL rich cmt-grdg to lmy DOL ip,sl anhy AA,sl chky/tr plty frag,tr CHT AA,POR-FLOR-STN AA,g fast stmg mlky CUT"

7220.00 7240.00 "DOL m-dkbrn,occ dkbrnblk,vfxl-micsuc-gran,DOL GRNST intbd in LS GRNST AA,sl dns,calc-occ grdg to dol LS,fr intxl POR,g even mod bri yel FLOR,g brn-dkbrn/tr blk dd o STN,g fast stmg mlky CUT"

7240.00 7260.00 "LS ltbrn-tan,occ crm-wh,brn,vfxl-micxl-crpxl,alg,pred GRNST intbd/PCKST & GRNST DOL AA,sl chky/tr plty frag,DOL rich cmt-occ grdg to lmy DOL,sl anhy/vrr xl frag,scat CHT AA,fr-tr intxl POR,FLOR AA,g ltbrn-brn/rr blk STN,g fast stmg mlky CUT"

7260.00 7280.00 "LS tan-ltbrn,occ brn,crm-wh ip,crpxl-micxl,occ vfxl-gran,pred dns v sl fos occ plty PKST,w/intbd v sl alg GRNST,DOL rich cmt ip,rr thn micxl-sl micsuc lmy DOL GRNST,scat wh-bf sl fos CHT frag-trip ip,tt-fr intxl POR,tr-fr dull-bri yel FLOR,tr brn-dkbrn STN,vrr blk dd o STN,g mod fast stmg CUT"

7280.00 7290.00 "LS AA,w/incr plty dns,v sl fos PKST,decr DOL cmt,scat CHT frag,decr POR-FLOR-STN-CUT AA"

7290.00 7300.00 "LS AA,scat alg mat-tr alg POR,thn brn-mbrn DOL GRNST AA,scat trnsl-wh-bf occ trip-fos CHT frag,tr-fr intxl-alg POR,tr-fr dull-bri yel FLOR,tr-fr ltbrn-brn STN-v rr spty blk dd o STN,tr g slow-fast stmg CUT"

7300.0 7320.00 "LS tan-brn-mbrn,crpxl-vfxl,gran-micsuc ip,rr alg mat,pred sl fos dns tt occ plty PKST w/thn intbd GRNST-incr w/depth,scat thn lmy rthy DOL GRNST incl-lams,tr clr-trnsl-wh sl fos CHT frag,occ anhy-rr xl,tr-fr intxl-sl alg POR,tr-fr dull-bri yel FLOR,tr ltbrn-mbrn STN,v rr spty blk dd o STN,tr g slow-fast stmg CUT "

7320.00 7330.00 "LS AA,pred PKST AA,incr plty-w/thn sl dol GRNST,decr DOL GRNST incl-lams,scat-abnt CHT frag,tr intxl POR,n-v rr alg POR,tr dull-bri yel FLOR,rr-tr lt-dkbrn-v rr spty blk STN,tr slow-rr fast stmg CUT"

7330.00 7340.00 "LS AA,sl incr DOL GRNST frag,decr POR-FLOR-STN-CUT

FORMATION TOPS

OPERATOR: MOBIL
WELL NAME: RATHERFORD UNIT #13-34 SE 1-C/1-B HORIZONTAL LATERAL LEG #2 &SIDETRACK

FORMATION NAME		SAMPLES MEASURED DEPTH	SAMPLES TRUE VERTICAL DEPTH	DATUM KB:4694'
LOWER ISMAY		5468'	5365'	-671'
GOTHIC SHALE		5404'	5396'	-702'
DESERT CREEK		5428'	5414'	-720'
DC 1-A ZONE		5435'	5418'	-724'
DC 1-B ZONE		5466'	5435'	-741'
DC 1-C ZONE		5526'	5452'	-758'

GEOLOGICAL SUMMARY

AND

ZONES OF INTEREST

The Mobil Exploration and Production U.S. Inc., Ratherford Unit #13-34 Southeast Horizontal Lateral Leg 2 was a re-entry of the Mobil Ratherford Unit #13-34 located in Section 13, T41S, R23E. The northwest Lateral Leg #1 was drilled in May of 1995. Lateral Leg #2 was begun on September 15, 1997', with the subsequent sidetrack begun on September 23, 1997'. The curve section was completed on September 20, 1997 at a measured depth of 5566', 5456' true vertical depth, and the lateral section was begun in the 1-C porosity zone. The lateral reached a measured depth of 7344', true vertical depth of 5460.7', with a horizontal displacement of 1891.0' and true vertical plane of 132.3 degrees, on September 23, 1997, in the upper Desert Creek 1-C zone, and was sidetracked in a southeasterly direction from 6656' measured depth, 5443.65' true vertical depth, with a horizontal displacement of 1205', to a measured depth of 7516', 5444.4' true vertical depth, with a horizontal displacement of 2060'. The sidetrack was terminated on September 27, 1997. The only minor problems of note encountered while drilling the lateral and subsequent sidetrack, was the water flow encountered in the lateral and sidetrack sections and the failure of the MWD tool after beginning the sidetrack. The water flow increased from none to over 45 barrels per hour at the end of the sidetrack section. This lateral used fresh water and then an oil and water emulsion with polymer sweeps as the drilling fluid. The lateral made a minor amount of oil and significant amounts of gas while drilling both the 1-C and 1-B porosity zones. The background gases noted on the accompanying mud log showed substantial increases while drilling the 1-C porosity in the lateral section and continued through the 1-B in the sidetrack section. A gradual tapering off of gas was seen near the end of the sidetrack as the porosity decreased. The samples had good oil shows throughout the drilling of the lateral in the 1-C porosity and decreased, as the well was sidetrack upward into the 1-B with the decrease in the porosity.

The primary objectives of the Ratherford Unit #13-34 Leg 2 horizontal lateral were the effective porosity, staining and reservoir properties in 1-C and 1-B zones of the Desert Creek Member of the Upper Paradox Formation. The lower 1/3 of the Upper Ismay, the entire Lower Ismay, Gothic Shale, and transition zone at the top of the Desert Creek were drilled during the curve section of the lateral. Kick off point for this lateral was 5320', measured depth and 5318.5' true vertical depth, in the lower portion of the Upper Ismay member of the Paradox Formation.

The lower portion of the Upper Ismay was predominately white to tan, occasionally cream to brown, cryptocrystalline to microcrystalline, chalky to clean and slightly argillaceous to occasionally silty limestone with scattered anhydrite crystals and occasional fracture filling, tan to gray brown chert fragments and occasional fossil remnants. Also present were thin, slightly marly to argillaceous, gray brown to dark brown, cryptocrystalline to microcrystalline, slightly calcareous dolomites, also very thin dark gray to black, carbonaceous, slightly calcareous to dolomitic shales and some very thin, gray, very limy siltstone inclusions to laminations near the base. While drilling the lower Upper Ismay, there was only very slight fracture porosity noted with no visible fluorescence, stain or cut noted. No gas increases were noted. The very dolomitic limestones at the base of the Upper Ismay were marked by the very thin, carbonaceous, dolomitic shale of the Hovenweep.

The top of the Lower Ismay was picked at 5368' measured depth, 5365' true vertical depth, at the base of the Hovenweep Shale. The upper 2/3 of the Lower Ismay was predominately limestone, which was tan to cream to white, occasionally light gray to brown, some dark brown, cryptocrystalline to microcrystalline, dense, chalky, occasionally argillaceous, slightly dolomitic and anhydritic with scattered brown to dark brown to black chert and very rare fossil remnants. No visible porosity, stain, fluorescence or cut was noted. Scattered throughout the Lower Ismay were thin interbedded dark brown to brown, limy, microcrystalline, shaley, argillaceous dolomites and dark gray to gray, calcareous to slightly dolomitic, micaceous shales. In the lower third of the Lower Ismay were very silty, dolmitic limestones that graded to light gray to cream, very limy, slightly micaceous siltstone inclusions and partings. These siltstones have been noted in other wells in this area in the basal Upper Ismay to Lower Ismay zones. The siltstone is the remnant of a slump feature from a higher platform to the east, present during middle Lower Ismay to early Upper Ismay deposition. The lower most portion of the Lower Ismay, just above the Gothic Shale, was a light gray to cream to white limestone, cryptocrystalline to microcrystalline, chalky, anhydritic, dolomitic, with thin brown to dark brown, very shaley, cryptocrystalline to microcrystalline dolomite and dark gray to black, calcareous to dolomitic, carbonaceous shales. The thin interbedded limestones and dolomites at the base of the Lower Ismay graded in to the shales of the Gothic. No sample or gas shows were noted in the Lower Ismay.

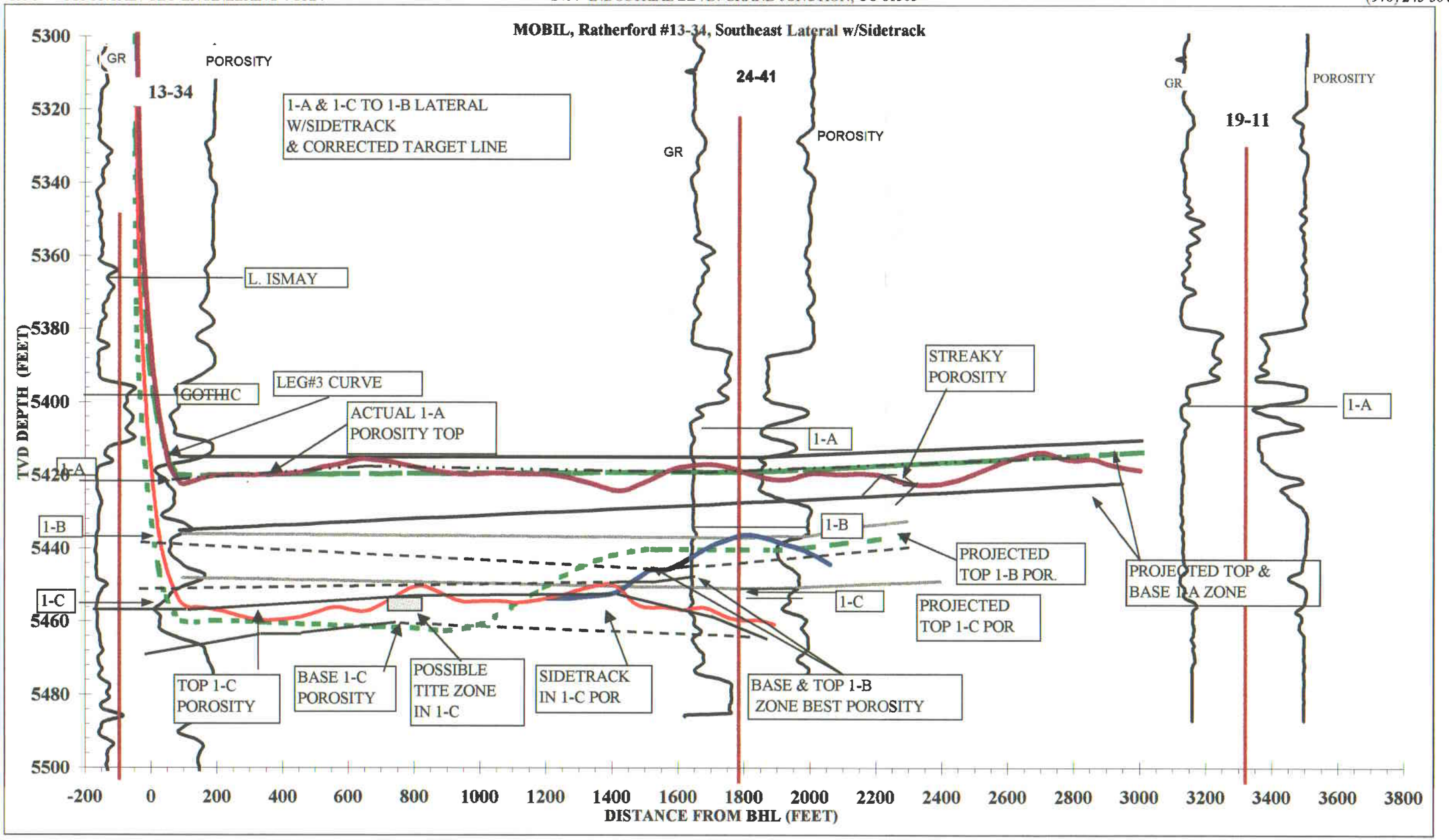
The top of the Gothic Shale was picked at 5404' measured depth, 5396' true vertical depth and was predominantly gray to dark gray to black, silty, carbonaceous, soft to moderately firm, calcareous to slightly dolomitic and slightly micaceous. Scattered within the Gothic were very thin, cryptocrystalline to microcrystalline, earthy, limestone and dolomite partings and inclusions, with very rare scattered anhydrite crystals. The top of the Gothic is rather gradational. Drilling time was somewhat erratic throughout the Lower Ismay with the top of the Gothic being picked predominantly from the slight increase in shale in the samples and a slight increase in penetration rate. The increase in shale at the top of the Gothic was quite subtle, followed by a gradual increase in shale content in the samples.

The top of the Desert Creek is commonly picked at the Gothic Shale to transition zone facies change, which in occurred at a measured depth of 5428' and a true vertical depth of 5414'. In this well the zone was interbedded cream to tan, some brown, slightly silty to very silty, argillaceous, dolomitic limestones, which were cryptocrystalline to microcrystalline, and tan to light brown, microcrystalline, argillaceous in part, limy dolomite. Within the limestones and dolomites were very thin dark gray to black, dolomitic to calcareous shale and rare very limy, very thin siltstone parting were noted in the transition zone section. The limestones and dolomites had very rare intercrystalline to a trace of oolicastic porosity, with a trace stain, fluorescence and cut.

The top of the Desert Creek 1-A porosity zone was picked at 5435' measured depth, 5418' true vertical depth and was based on sample identification as well as a significant increase in the penetration rate. The top of the porosity in the 1-A was flat with the top on the porosity log for the 19-12 well. The top in this curve section of the lateral was in a slightly oolitic to very algal, clean, slightly anhydritic dolomite grainstone, which had a limestone rich cement and graded to a very dolomitic, very slightly oolitic to very algal limestone grainstone with a dolomite rich cement, and had very rare scattered chert fragments. Noted in the dolomites and limestones were very thinly interbedded tight, cryptocrystalline, occasionally platy, anhydritic to very slightly dolomitic, slightly oolitic, tight limestone packstones near the top and middle of the 1-A zone. The lithology of the 1-A porosity remained fairly consistent throughout the curve with very minor variations of porosity type and rock classification being noted. The base of the 1-A porosity was encountered at a measured depth of 5466', 5435' TVD when the curve section encountered the 1-A to 1-B transition zone.

The sidetrack was begun on September 23', at a measured depth of 6657', 5453' true vertical depth, and a horizontal displacement of 1205', in the middle of the 1-C porosity zone. The lateral was sidetracked in the tan to brown to medium brown, algal limestone grainstones, with very thin limestone packstones and thin scattered dolomite grainstones of the good lithology in the 1-C. The sidetrack was drilled upward at a slight angle to a measured depth of 6930', 5449' true vertical depth, and a horizontal displacement of 1478', when the 1-C to 1-B transition zone was encountered. The well path continued upward through the tight cream to white, platy, cherty limestone packstone of the transition zone to a measured depth of 6954', 5447' true vertical depth, and a horizontal displacement of 1500' when the base of the 1-B porosity zone was encountered. The well path continued upward through the good dolomitic, algal limestone grainstones, which had good porosity and good sample shows, to a measured depth of 7025', 5445' true vertical depth, when the top of the 1-B porosity zone was penetrated. The well path was continued upward to acquire the target line, in interbedded tight limestone packstone with thin streaks of algal limestone grainstone, and very rare scattered dolomite packstones. These limestone and dolomite packstones had no visible porosity and no sample shows, while the limestone grainstones had fair intergranular porosity and a fair sample show. The well path was turned downward after reaching a true vertical depth of 5436', to try to reacquire the porosity zone noted from true vertical depths of 5444' to 5441'. As the well path continued downward from the true vertical depth of 5436' to the termination of the sidetrack at a measured depth of 7516', 5444' true vertical depth and a horizontal displacement of 2059', the lithology remained predominately the tight, platy, cherty limestone packstones, with very rare, thin, slightly algal limestone grainstones. The porosity zone noted as the sidetrack was drilled upward into the 1-B zone was not again encountered after again reaching a true vertical depth of 5444' and the lateral was terminated.

In conclusion, in tracking the well bore through the 1-C and 1-B porosity benches, the algal to intercrystalline porosity was very good with vertical and very minor lateral gradational changes in rock classification, from predominately intercrystalline and algal porosities to tight packstones near the top and base, from very limy dolomite to a very dolomitic limestone in the 1-C zone. In the 1-B zone the porosity noted on the offset log at the R. U. #24-41, was very thin and appeared to pinch out in the southeasterly direction from the 13-34 location. Sample shows were predominated good and stayed fairly consistent throughout the length of the lateral in the 1-C, with the 1-B zone having only very thin streaks of porosity which appeared to thin and pinch out as the lateral was continued. The background gases increased and remained high throughout the lateral until near the end of the 1-C lateral and the 1-B sidetrack, where they began decreasing. The effective or better porosity was associated with the algal limestone grainstone facies, which had fair to good, intercrystalline to oolitic porosities. Minor anhydrite plugging was noted throughout. The well produced significant amounts of gas while drilling the 1-C zone while minor water flows were noted in the 1-B sidetrack.


MOBIL, Ratherford #13-34, Southeast Lateral w/Sidetrack
13-34
24-41
19-11
GR
POROSITY
1-A & 1-C TO 1-B LATERAL
W/SIDETRACK
& CORRECTED TARGET LINE
L. ISMAY
GOTHIC
LEG#3 CURVE
ACTUAL 1-A
POROSITY TOP
STREAKY
POROSITY
1-A
1-B
1-C
PROJECTED
TOP 1-B POR.
PROJECTED
TOP 1-C POR
PROJECTED TOP &
BASE 1-A ZONE
TOP 1-C
POROSITY
BASE 1-C
POROSITY
POSSIBLE
TITE ZONE
IN 1-C
SIDETRACK
IN 1-C POR
BASE & TOP 1-B
ZONE BEST POROSITY
TVD DEPTH (FEET)
5300
5320
5340
5360
5380
5400
5420
5440
5460
5480
5500
-200
0
200
400
600
800
1000
1200
1400
1600
1800
2000
2200
2400
2600
2800
3000
3200
3400
3600
3800
DISTANCE FROM BHL (FEET)

MOBIL

RATHERFORD UNIT #13-34
SE HORIZONTAL LATERAL LEG #3
1-A POROSITY BENCH
DESERT CREEK MEMBER
PARADOX FORMATION
SECTION 13, T41S, R23E
SAN JUAN, UTAH

GEOLOGY REPORT
by
DAVE MEADE / MARVIN ROANHORSE
ROCKY MOUNTAIN GEO-ENGINEERING CORP.
GRAND JUNCTION, COLORADO
(970) 243-3044

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WELL SUMMARY

OPERATOR:	MOBIL EXPLORATION & PRODUCTION U.S. INC.
NAME:	RATHERFORD UNIT #13-34 SE HORIZONTAL LATERAL LEG #3 IN 1-A POROSITY BENCH, DESERT CREEK
LOCATION:	SECTION 13, T41S, R23E
COUNTY/STATE:	SAN JUAN, UTAH
ELEVATION:	KB: 4694' GL: 4682'
SPUD DATE:	09/16/97
COMPLETION DATE:	10/03/97
DRILLING ENGINEER:	BENNY BRIGGS
WELLSITE GEOLOGY:	DAVE MEADE / MARVIN ROANHORSE
MUDLOGGING ENGINEERS:	DAVE MEADE / MARVIN ROANHORSE
CONTRACTOR:	BIG "A" RIG 25
TOOLPUSHER:	J. DEES
HOLE SIZE:	4 3/4"
CASING RECORD:	KICK OFF POINT IN WINDOW AT 5303' MEASURED DEPTH
DRILLING MUD:	M-I
ENGINEER:	RON WESTENBERG
MUD TYPE:	FRESH WATER & BRINE WATER W/ POLYMER SWEEPS
DIRECTIONAL DRILLING CO:	SPERRY-SUN
ELECTICAL LOGGING:	NA
TOTAL DEPTH:	8416' MEASURED DEPTH; 5418.5' TRUE VERTICAL DEPTH
STATUS:	TOH & LAY DOWN TOOLS - PREPARE FOR RIG MOVE

DRILLING CHRONOLOGY
RATHERFORD UNIT #13-34
1-A SE HORIZONTAL LATERAL LEG #3

DATE	DEPTH	DAILY	ACTIVITY
9/27/97	7516'	228'	DIR DRLG & SURVEYS TO TD OF 7516'-CIR SWEEP & SMPLS-TOH TO WINDOW-PUMP BRINE WATER-TOH-L.D. LATERAL ASSEMBLY-P.U. RETRIEVING HOOK-TIH-LATCH INTO WHIPSTOCK-TOH-CHANGE BHA-P.U. STARTER MILL-TIH-SET WHIPSTOCK & ORIENT-MILL W/STARTER MILL 5294-5296'-TOH
9/28/97	5294'	9'	TOH-L.D STARTER MILLS-P.U. INSERT WINDOW MILL & WATER MELLON-TIH-- MILL FROM 5294'-5303'-PUMP SWEEP & CIR OUT-SPOT 10# BRINE-TOH-L.D. MILLS-P.U. CURVE ASSEMBLY-ORIENT & TEST-TIH-CIR-RIG UP & RUN GYRO DATA
9/29/97	5303'	199'	RUN GYRO & GET GYRO TOOL FACE-TIME DRLG @ 2 MIN/INCH FROM 5303' T0 5307'-DRLG & WIRE LINE SURVEYS-TO 5326'-RIG DOWN GYRO DATA-DIR DRLG & SURVEYS TO 5502'
9/30/97	5502'	534'	PUMP 12 BBL SWEEP & CIR OUT SMPLS-PUMP 70 BBLS-L.D. 99 JTS D.P. & TOH-L.D. CURVE BHA-P.U. LATERAL BHA & BIT-ORIENT & TEST MWD & MOTOR-P.U. PH6 DP 4 1/4" DRL COLLARS-TIH-CIR-DIR DRLG & SURVEYS
10/01/97	6036'	1260'	DIR DRLG & SURVEYS
10/02/97	7276'	686'	DIR DRLG & SURVEYS
10/03/97	7962'	454'	DIR DRLG & SURVEYS-CIR SPLS & SWEEP @ TD OF 8416'-CIR-TOH-L.D DRL PIPE-L. D CURVE ASSEMBLY-PREPARE TO MOVE RIG

DAILY ACTIVITY

Operator: MOBIL
Well Name: RATHERFORD UNIT #13-34 SE 1-A HORIZONTAL LATERAL LEG #3

DATE	DEPTH	DAILY	DATE	DEPTH	DAILY
9/27/97	7516'	228'			
9/28/97	5294'	9'			
9/29/97	5303'	199'			
9/30/97	5502'	534'			
10/01/97	6036'	1260'			
10/02/97	7276'	686'			
10/03/97	7962'	454'			
TD	8416'				

BIT RECORD

OPERATOR: MOBIL
WELL NAME: RATHERFORD UNIT #13-34 SE 1-A HORIZONTAL LATERAL LEG #3

RUN	SIZE	MAKE	TYPE	IN/OUT	FTG	HRS	FT/HR
#1	4 3/4"	STC	MF-15PG	5303'/ 5502'	199'	21.0	9.5
#2	4 3/4"	HTC	STR-20	5502'/ 8416'	2914'	64.0	45.6

Customer ... : MOBIL (UTAH)
Platform ... : RATHERFORD UNIT
Slot/Well .. : BA2 5/13-34, 3A1

MEASURED DEPTH	ANGLE DEG	DIRECTION DEG	TVD	NORTHINGS FEET	EASTINGS FEET	VERTICAL SECTION	DOG LEG
5200	0.28	180.79	5198.47	39.94 N	24.77 W	-43.2	0
5294	0.46	205.1	5292.47	39.37 N	24.93 W	-43.01	0.25
5303	3.4	125.52	5301.46	39.18 N	24.73 W	-42.73	37.19
5313	8.2	122.35	5311.41	38.63 N	23.89 W	-41.72	48.09
5323	13.4	121.34	5321.23	37.64 N	22.29 W	-39.85	52.03
5333	18.6	120.85	5330.84	36.22 N	19.93 W	-37.1	52.02
5343	23.5	120.55	5340.17	34.39 N	16.85 W	-33.52	49.01
5353	28.3	120.34	5349.16	32.18 N	13.08 W	-29.17	48.01
5363	33	120.2	5357.76	29.61 N	8.68 W	-24.09	47.01
5373	37.3	119	5365.94	26.77 N	3.67 W	-18.36	43.55
5383	40.2	120	5373.73	23.68 N	1.77 E	-12.13	29.67
5393	44.1	123.7	5381.15	20.14 N	7.47 E	-5.44	46.22
5403	49.5	123.7	5387.99	16.1 N	13.53 E	1.85	54
5413	55.2	123.9	5394.1	11.69 N	20.1 E	9.76	57.02
5423	59.1	123.4	5399.52	7.04 N	27.1 E	18.16	39.23
5433	61.2	120.1	5404.5	2.48 N	34.47 E	26.82	35.5
5443	64.3	117	5409.08	1.77 S	42.28 E	35.65	41.47
5453	68.2	115.1	5413.1	5.78 S	50.5 E	44.69	42.7
5463	72.8	113.8	5416.44	9.68 S	59.08 E	53.95	47.6
5473	77.5	113	5419	13.52 S	67.95 E	63.42	47.63
5502	89.8	109.5	5422.21	23.93 S	94.76 E	91.35	44.07
5528.95	91.6	110.3	5421.88	33.11 S	120.1 E	117.37	7.31
5560.69	91.5	113.1	5421.02	44.84 S	149.58 E	148.24	8.82
5592.35	91.2	115.2	5420.27	57.78 S	178.45 E	179.33	6.7
5624.15	90.2	116.3	5419.88	71.6 S	207.09 E	210.71	4.67
5655.95	89.8	118.4	5419.88	86.21 S	235.34 E	242.22	6.72
5686.87	90	120.2	5419.94	101.34 S	262.3 E	272.99	5.86
5718.61	90	120.3	5419.94	117.33 S	289.72 E	304.62	0.32
5750.36	90.4	122.8	5419.83	133.94 S	316.77 E	336.31	7.97
5782.11	89.9	125.1	5419.74	151.67 S	343.11 E	368.05	7.41
5813.99	90.5	125.6	5419.63	170.11 S	369.11 E	399.93	2.45
5845.75	90.4	125.3	5419.38	188.53 S	394.98 E	431.69	1
5877.47	90.9	126	5419.02	207.02 S	420.76 E	463.41	2.71
5909.27	91.6	126	5418.33	225.71 S	446.48 E	495.19	2.2

Customer ... : MOBIL (UTAH)
Platform ... : RATHERFORD UNIT
Slot/Well .. : BA2 5/13-34, 3A1

MEASURED DEPTH	ANGLE DEG	DIRECTION DEG	TVD	NORTHINGS FEET	EASTINGS FEET	VERTICAL SECTION	DOG LEG
5941.15	91.2	126	5417.55	244.44 S	472.26 E	527.06	1.25
5972.13	90.4	126.3	5417.12	262.71 S	497.27 E	558.03	2.76
6003.12	91.6	126.5	5416.58	281.1 S	522.21 E	589	3.93
6034.88	91.5	125.4	5415.72	299.74 S	547.91 E	620.75	3.48
6193.59	88.8	126.7	5417.3	393.08 S	676.24 E	779.41	1.3
6225.42	88.8	126.8	5417.96	412.12 S	701.74 E	811.22	0.31
6257.25	89.2	127.2	5418.52	431.27 S	727.16 E	843.02	1.78
6289.05	89.1	127.4	5418.99	450.54 S	752.45 E	874.79	0.7
6320.9	89.6	127.5	5419.35	469.91 S	777.74 E	906.61	1.6
6352.64	89.5	127.7	5419.6	489.27 S	802.88 E	938.32	0.7
6384.49	90	128.1	5419.74	508.84 S	828.01 E	970.13	2.01
6416.31	90.4	128.1	5419.63	528.47 S	853.05 E	1001.9	1.26
6448.11	90.4	127.7	5419.41	548.01 S	878.15 E	1033.66	1.26
6479.95	89.8	127.4	5419.35	567.41 S	903.39 E	1065.47	2.11
6511.83	89.8	127.2	5419.46	586.73 S	928.75 E	1097.32	0.63
6543.58	89.7	127.4	5419.6	605.97 S	954.01 E	1129.05	0.7
6575.3	90.2	126.5	5419.63	625.04 S	979.35 E	1160.75	3.25
6606.94	89.9	125.4	5419.6	643.61 S	1004.97 E	1192.38	3.6
6638	89.1	124.7	5419.87	661.45 S	1030.39 E	1223.44	3.42
6669.73	89.2	124.5	5420.34	679.46 S	1056.51 E	1255.17	0.7
6701.47	88.3	125.3	5421.04	697.62 S	1082.53 E	1286.9	3.79
6733.17	88.8	124.7	5421.84	715.8 S	1108.49 E	1318.59	2.46
6764.9	88.7	124.2	5422.53	733.74 S	1134.65 E	1350.31	1.61
6796.73	87.9	124.4	5423.47	751.67 S	1160.93 E	1382.12	2.59
6828.43	89.6	125.3	5424.17	769.78 S	1186.94 E	1413.81	6.07
6860.24	91.8	127.4	5423.78	788.63 S	1212.56 E	1445.61	9.56
6891.19	92.2	127.5	5422.7	807.44 S	1237.11 E	1476.51	1.33
6922.03	92.3	127.2	5421.49	826.13 S	1261.61 E	1507.3	1.02
6953.87	92.5	127	5420.15	845.32 S	1286.98 E	1539.09	0.89
6984.93	92.6	127	5418.77	864 S	1311.76 E	1570.1	0.32
7016.78	91	127.4	5417.77	883.24 S	1337.12 E	1601.91	5.18
7048.54	90.4	126.7	5417.38	902.38 S	1362.46 E	1633.65	2.9
7080.24	90.8	127.7	5417.05	921.54 S	1387.71 E	1665.32	3.4
7112.03	89.5	128.1	5416.97	941.07 S	1412.8 E	1697.07	4.28
7142.91	89.2	128.1	5417.32	960.12 S	1437.1 E	1727.9	0.97

Customer ... : MOBIL (UTAH)
Platform ... : RATHERFORD UNIT
Slot/Well .. : BA2 5/13-34, 3A1

MEASURED DEPTH	ANGLE DEG	DIRECTION DEG	TVD	NORTHINGS FEET	EASTINGS FEET	VERTICAL SECTION	DOG LEG
8383	89.3	124.4	5418.1	1693.54 S	2436.47 E	2967.21	1.52
8416	89.3	124.4	5418.5	1712.18 S	2463.7 E	3000.21	0

MUD REPORT

OPERATOR: MOBIL
WELL NAME: RATHERFORD UNIT #13-34 SE 1-A HORIZONTAL LATERAL LEG #3

DATE	DEPTH	WT	VIS	PLS	YLD	GEL	pH	WL	CK	CHL	CA	SD	OIL	WTR
9/27/97	5296'	8.8	27	1	1	0/0	11.6	5.6	NC	80000	540	–	8%	92%
9/28/97	5303'	8.8	27	1	1	0/0	11.6	9.2	NC	76000	580	–	7%	93%
9/29/97	5308'	8.9	27	1	1	0/0	11.6	14.9	NC	82000	620	–	6%	94%
9/30/97	5502'	8.8	27	1	1	0/0	11.5	13.8	NC	78000	1600	–	4%	96%
10/01/97	6425'	8.9	27	1	1	0/0	11.6	14.3	NC	84000	1600	–	4%	96%
10/02/97	7524'	9.0	28	1	1	0/0	11.6	14.2	NC	84000	1600	–	7%	93%
10/03/97	6598'	8.4	27	1	1	0/0	11.6	12.4	NC	24600	500	–	6%	94%

SAMPLE DESCRIPTIONS

OPERATOR: MOBIL
WELL NAME: RATHERFORD UNIT #13-34 SE 1-A HORIZONTAL LATERAL LEG #3

DEPTH	LITHOLOGY

5300.00 5310.00 "LS brn-ltbrngy-wh,occ tan,crpxl-micxl,occ vfxl-sl micsuc,dns PCKST intbd/chky plty prtgs-frag,anhy,scat brn CHT frag,tt-rr intxl POR,NFSOC"

5310.00 5320.00 "LS AA,pred sl arg PKST,v rr frag POR,n-v rr dull yel FLOR,NSOC,w/smky gybrn-gy CHT frag,rr dkbrn micxl v arg-shy lmy DOL lams-tt-NFSOC"

5320.00 5330.00 "LS wh-crm-tan,brn-mbrn,crpxl-micxl,dns,chk ip,arg,sl dol,tt-v rr frac-intxl POR,NFSOC;brn-smky gy-smky gybrn CHT frag,v rr DOL AA,tt,NFSOC"

5330.00 5340.00 "LS AA,w/v thn DOL ptgs AA,scat CHT AA,thn dkgy-blk,sbblky,calc-sl dol,mica,v sl slty,occ carb SH lams"

5340.00 5350.00 "LS wh-crm,occ tan-brn,crpxl-micxl,chk,occ arg,chty,sl dol,anhy ip-v rr ANHY xl,tt-NFSOC,w/DOL & SH AA,tr scat CHT frag AA"

5350.00 5370.00 "LS wh-crm,brn-gybrn,crpxl-micxl,rr vfxl,arg,dol,anhy,v sl slty-shy,occ grdg to v v lmy SH,tt-v rr intxl POR,NFSOC,w/scat trnsl-smky gy-dkbrn CHT frag,thn dkgy-blk carb calc-dol mica slty SH & dkgybrn-dkbrn micxl arg lmy v shy tt DOL NFSOC"

5370.00 5381.00 "LS AA,bcmg v slty-grdg to v lmy sl mica ltgy-crm SLTST lams & incl,n-v rr intxl POR,NFSOC,w/DOL-CHT AA & decr SH AA"

5380.00 5400.00 "LS wh-crm,brn-ltbrn,crpxl-micxl,rr vfxl,arg,dol,anhy,sl shy-slty,fos,rr intxl POR,NFSOC,occ grdg to ltgy-crm lmy sl mica SLTST,w/scat trnsl-smky gy-brn CHT frag,thn dkgy-blk carb calc-dol mica slty SH & dkgybrn-dkbrn micxl arg lmy v shy tt DOL NFSOC "

5400.00 5410.00 "LS AA,decr slty,occ plty,tt-v rr intxl POR,rr spty dull yel FLOR,NSOC,tr tan-bf crpxl-rr micxl lmy arg DOL tt NFSOC,decr CHT AA,v rr SLTST AA"

5410.00 5420.00 "LS pred crm-wh,rr tan,crpxl-plty,occ micxl,dol,chty,anhy,tt-v rr frac POR,FLOR-STN-CUT AA,tr bf-tan crpxl DOL,rr bf-trnsl CHT,incr blk-dkgy carb calc-dol sl slty sbblky-sbplty SH"

5420.00 5430.00 "SH dkbrnblk-blk,sbblky-blky-sl plty,sft-frm,occ mfrm-hd,rthy-slty,carb,tr coaly frag,rr pp mica,calc-sl lmy ip,sooty"

5430.00 5440.00 "SLTST ltgy-gybrn,occ mot/blk SH,calc-dol-occ sl lmy,grdg to slty calc DOL,bri yel FLOR,NSOC,w/SH AA"

5440.00 5450.00 "SH blk-dkbrnblk,sbblky-blky,sl plty,sft-frm,occ mfrm,rthy,occ grdg to CLYST,sl slty,carb,tr coaly frag,rr calc xl incl,vrr pp mica,calc-sl calc,sooty"

5450.00 5470.00 "LS tan-crm-wh,occ ltgybrn,crpxl-plty,occ micxl,sl dol-occ grdg lmy DOL,anhy,tt-v rr intxl POR,tr scat dull-mod bri yel FLOR,no-fr ltbrn STN,p dif/tr fnt res ring CUT,tr bf-tan crpxl-micxl DOL,tt-rr POR,fr bri yel FLOR,fr ltbrn STN,fr-g slow stmg CUT"

DEPTH	LITHOLOGY

5470.00 5480.00 "LS crm-tan,occ ltbrn,crpxl-micxl,occ vfxl-gran-micsuc,sl alg-v alg GRNST,w/scat dns PCKST frag,anhy-chky,occ grdg to lmy DOL,tt-tr intxl-rr agl POR/tr POR fl,g scat bri yel FLOR,fr ltbrn STN,g mod fast stmg CUT"

5480.00 5503.00 "LS tan-brn,occ crm strk,tr ltbrn,micxl-vfxl-gran,agl mat,occ crpxl,agl-sl ool GRNST,tr DOL cmt-grdg to alg-lmy DOL GRNST,sl chty-anhy,g intxl-agl-occ ool POR,g even bri yel FLOR,fr-g ltbrn STN,g fast stmg-sl blooming mlky CUT"

5502.00 5510.00 "ABNT SH-LS PKST-SLTST CVGS AFTER TRIP"
"LS AA,w/thn alg DOL GRNST AA,tr FLOR-STN-CUT AA"

5510.00 5520.00 "LS ltbrn-brn,micxl-vfxl,gran-micsuc,alg-v sl ooc GRNST,v thn fos PKST,tr DOL rich cmt-tr v thn sl alg DOL GRNST w/LS rich cmt,v sl chty,v rr ANHY incl-xl,rr trnsl-bf CHT frag,fr-g alg-intxl POR,tr-fr bri yel FLOR,fr ltbrn-brn STN,g mod fast stmg CUT"

5520.00 5530.00 "LS AA,w/decr DOL GRNST AA,fr-mg FLOR-STN-CUT"

5530.00 5550.00 "LS ltbrn-brn,occ tan,micxl-vfxl,occ crpxl,gran-micsuc,alg-v sl ool,pred GRNST,w/v rr scat dns-fos PKST,v thn brn-dkbrn v lmy DOL GRNST incl-lams,scat trnsl CHT frag,occ ANHY xl-incl,tr-g intxl-alg POR,fr-g bri yel FLOR,fr-g ltbrn STN,fr mod fast stmg CUT"

5550.00 5580.00 "LS tan-brn,ltbrn,micxl-vfxl,gran-micsuc,occ crpxl-dns,pred alg-v sl ool GRNST,w/thn scat v lmy micsuc sl alg DOL GRNST & dol fos LS PKST frag,scat ANHY xl-incl,sl anhy-tr ANHY fl POR-incl,fr-g intxl-tr alg POR,fr-g bri yel FLOR,g brn STN,g mod fast CUT"

5580.00 5590.00 "LS AA,w/incr DOL rich cmt-grdg to v lmy sl alg DOL GRNST ip,POR-FLOR-STN-CUT AA"

5590.00 5600.00 "LS AA,v dol-grdg to rr lmy DOL GRNST,tr-g intxl-alg POR,fr-g bri yel FLOR,fr-g ltbrn STN,fr-g slow-fast stmg CUT"

5600.00 5610.00 "LS tan-brn,ltbrn,micxl-vfxl,gran-micsuc,occ crpxl-dns,pred
alg-v sl ool GRNST,w/thn scat v lmy micsuc sl alg DOL GRNST & dol fos LS PKST frag,scat ANHY xl-incl,sl anhy-tr ANHY fl POR-incl,POR-FLOR-STN-CUT AA"

5610.00 5630.00 "LS AA,w/decr amnts DOL cmt & v anhy DOL GRNST,incr ANHY xl-incl-POR fl,fr-g intxl-alg POR,g bri yel FLOR,fr-g ltbrn STN,fr-g mod fast-fast stmg CUT"

5630.00 5650.00 "LS tan-brn,ltbrn,micxl-vfxl,gran-micsuc,occ crpxl-dns,pred sl agl GRNST rr sl ooc/tr anhy POR fl,w/incr thn scat v lmy micsuc DOL GRNST prtgs-strk,tr dol LS PKST frag,sl anhy/tr ANHY xl-incl,fr-g intxl/rr pp agl POR,g even bri yel FLOR,STN-CUT AA"

5650.00 5670.00 "LS tan-ltbrn,occ crm,micxl-micsuc-gran,crpxl-agl,pred GRNST occ sl agl,decr DOL GRNST strk,sl anhy/tr POR fl,vrr chky prtgs,vrr mic fos,g intxl-tr pp agl POR,g even bri yel FLOR,g-fr ltbrn STN,g fast stmg mlky CUT"

5670.00 5690.00 "LS AA,pred LS GRNST,incr agl-sl ooc-oom,tr ool & mic fos,tr dol rich cmt,occ grdg to lmy DOL ip,sl anhy/tr-rr POR fl-vrr xl frag,g intxl-pp agl POR,tr oom-rr ooc POR,FLOR AA,g ltbrn/tr brn STN,g faast stmg-sl blooming mlky CUT "

DEPTH	LITHOLOGY

5930.00 5950.00 "LS ltbrn-tan-crm,occ brn,gran-micsuc-vfxl,micxl,occ crpxl,pred GRNST/sl agl-dol,tr agl PCKST,anhy/tr POR fl-rr xl,rr DOL GRNST incl,tr sl agl LS PKST frag,rr chky plty frag,fr-g intxl POR,g even bri yel FLOR,STN-CUT AA"

5950.00 5970.00 "LS tan/occ crm incl,ltbrn,occ brn,micsuc-vfxl-gran,occ agl-crpxl,GRNST sl agl,tr DOL cmt/rr DOL GRNST incl-occ grdg to lmy DOL ip,incr scat LS PCKST,anhy/rr xl incl-tr anhy POR fl,g intxl-rr pp agl POR,FLOR AA,g ltbrn-rr brn-vrr dkbrn STN,g fast stmg CUT"

5980.00 6000.00 "LS tan-crm-ltbrn,occ brn,micxl-vfxl,gran-micsuc,crpxl-dns,pred sl oom-agl GRNST/tr anhy POR fl,w/incr lmy micsuc DOL GRNST prtgs-strk,tr agl-oom dol LS PKST frag,anhy/tr ANHY xl-incl,fr-g intxl POR,g even bri yel FLOR,fr-g ltbrn/vrr blk STN,CUT AA"

6000.00 6010.00 "LS AA,GRNST/tr scat sl ool dns PCKST frag,anhy AA,POR-FLOR-STN-CUT AA"

6010.00 6030.00 "LS tan-crm-ltbrn,occ ltgybrn-wh,vfxl-gran-micsuc,crpxl-micxl,GRNST/tr DOL cmt-tr DOL GRNST incl,tr scat dns-sl ool LS PCKST,occ grdg to lmy DOL ip,anhy/tr POR fl-xl incl,rr mic fos,fr-g intxl POR,g even bri yel FLOR,fr-g ltbrn STN,g fast stmg mlky CUT"

6030.00 6050.00 "LS AA,pred GRNST occ oom-agl ip/tr DOL cmt-DOL GRNST incl,incr scat PCKST AA/rr mic fos,rr chky plty PCKST frag,anhy-tr POR fl,fr-g intxl POR,g even bri yel FLOR,g-fr ltbrn STN,g mod fast-fast stmg mlky CUT"

6050.00 6070.00 "LS AA,vfxl-gran-micsuc,micxl-agl-crpxl,pred GRNST bcmg agl-ooc,w/scat lmy micsuc DOL GRNST frag-incl,scat anhy sl agl-ool LS PKST frag,anhy/rr xl ANHY incl-tr POR fl,g-fr intxl-oom/tr pp agl POR,g even bri yel FLOR,g ltbrn-rr brn STN,g mod fast stmg CUT"

6070.00 6090.00 "LS AA,vfxl-crpxl-micxl,gran-occ micsuc,bcmg incr scat sl dol-anhy dns-sl agl LS PKST,tr scat LS GRNST/tr DOL cmt,anhy/AA-tr POR fl,g-fr intxl-tr oom POR,g even bri yel FLOR,g-fr ltbrn/vrr blk STN,g mod fast stmg CUT"

6090.00 6100.00 "LS AA,pred agl-occ ool-sl oom dns PCKST/scat sl dol GRNST prtgs,occ grdg to lmy DOL,sl anhy/rr POR fl,FLOR-STN-CUT AA"

6100.00 6110.00 "LS AA,bcmg incr sl agl-oom GRNST/tr DOL cmt-tr DOL GRNST incl,scat PCKST AA,POR-FLOR-STN-CUT AA"

6110.00 6130.00 "LS AA,vfxl-gran-micsuc,micxl-crpxl,bcmg incr GRNST sl agl-rr oom frag,tr DOL cmt-occ DOL GRNST incl,scat dns-chky plty PCKST-occ sl agl,anhy/tr xln-POR fl,g-fr intxl-tr oom & pp agk POR,g even bri yel FLOR,fr-g ltbrn-tr brn STN,g mod fast-fast stmg CUT "

6130.00 6150.00 "DOL mbrn-brn,occ ltbrn,micsuc-micxl,gran,sl lmy DOL GRNST intbd in LS GRNST & PCKST AA,sl anhy/vrr xl frag,g intxl-sl agl POR,g bri yel FLOR,g brn-occ dkbrn STN,g fast-mod fast stmg CUT"

6150.00 6190.00 "LS tan-brn,occ wh-crm,micxl-vfxl,gran-suc,occ crpxl-dns,pred alg GRNST w/thn tr sl fos occ plty PKST,rr-tr brn vfxl DOL GRNST frag,scat trnsl-crl CHT frag,sl anhy-tr ANHY xl-incl,rr ool mat,tt-g intxl-alg POR,fr-g dull-bri yel FLOR,fr brn stn,g fast CUT "

6180.00 6190.00 "LS AA,DOL rich cmt,scat DOL GRNST frag,POR-FLOR-STN-CUT AA"

DEPTH	LITHOLOGY

6190.00 6210.00 "LS tan-brn,occ wh-crm,micxl-vfxl,gran-suc,occ crpxl-dns,intbd alg GRNST & thn sl fos occ plty PKST,DOL rich cmt,rr brn lmy DOL GRNST frag,tr trnsl-crl CHT frag,rr ANHY xl-incl,v rr ool,tr-g intxl-alg POR,fr-g dull-bri yel FLOR,fr brn stn,g mod fast CUT "

6210.00 6230.00 "LS AA,incr scat sl fos PKST frag,dol-v DOL rich cmt ip,scat trnsl-clr CHT frag,v rr ool mat,tt-v g intxl-tr alg POR,fr-g dull-bri yel FLOR,tr-fr ltbrn-rr dkbrn STN,fr-g mod fast-fast stmg CUT"

6230.00 6250.00 "LS tan-brn,occ wh-crm,micxl-vfxl,gran-suc,occ crpxl-dns,pred alg GRNST w/tr fos-sl alg PKST,DOL cmt-rr vfxl alg DOL GRNST incl,scat trnsl-crl CHT frag,sl anhy-tr ANHY xl-incl,rr ool mat,tr-g intxl-alg POR,fr-g dull-bri yel FLOR,fr brn stn,g mod fast CUT "

6250.00 6270.00 "LS AA,incr ool-tr ooc-oom mat,incr dol fos anhy PKST,sl decr POR,fr-mg dull-bri yel FLOR,STN-CUT AA,w/DOL rich cmt & grdg to ooc-oom brn micxl-vfxl sl alg DOL GRNST,fr dull-bri yel FLOR,fr ltbrn-brn STN,fr-g mod fast stmg CUT"

6270.00 6290.00 "LS & thn DOL AA,incr ooc-oom mat,decr alg mat,tr trnsl-wh-clr CHT frag,fr-g intxl-ooc POR,v rr alg POR,fr-g dull-bri yel FLOR,fr-g brn-ltbrn STN,tr blk dd o STN,fr-g mod fast-fast stmg CUT"

6290.00 6310.00 "LS tan-brn,occ wh-crm,micxl-vfxl,gran-suc,occ crpxl-dns,pred ooc-oom-sl alg GRNST w/tr ool PKST,DOL rich cmt-grdg to brn vfxl ool DOL GRNST frag,rr trnsl-crl CHT frag,tr ANHY xl-incl,tr-g intxl-ool-sl alg POR,fr-g dull-bri yel FLOR,fr brn stn,g fast CUT "

6310.00 6340.00 "LS AA,scat alg mat,g DOL rich cmt-scat ANHY xl-incl-tr POR fl,v rr CHT frag,decr v lmy DOL GRNST,POR-FLOR-STN-CUT AA"

6340.00 6360.00 "LS tan-brn,occ wh-crm,micxl-vfxl,gran-suc,occ crpxl-dns,pred alg-sl oom-ooc GRNST w/tr ool PKST,DOL rich cmt-grdg to brn vfxl ool DOL GRNST frag,rr trnsl-crl CHT,tr ANHY xl-incl,tr-g intxl-alg-sl ool POR,fr-g dull-bri yel FLOR,fr brn stn,g fast CUT "

6360.00 6400.00 "LS AA,scat alg mat,g DOL rich cmt-scat ANHY xl-incl-tr POR fl,v rr CHT frag,decr v lmy DOL GRNST-rr DOL PKST,sl decr ool POR,FLOR-CUT AA,fr-g ltbrn-brn STN,scat blk dd o STN in POR"

6400.00 6429.00 "LS tan-brn,occ wh-crm,micxl-vfxl,gran-micsuc,occ crpxl-dns,pred oom-ooc GRNST w/tr ool PKST,scat alg mat,DOL rich cmt-rr brn sl ool DOL GRNST frag,rr trnsl-bf CHT,tr ANHY xl-incl,fr-g intxl-ool POR,fr-g dull-bri yel FLOR,fr brn-tr blk STN,g mod fast CUT "

6430.00 6460.00 "LS AA,pred ooc-oom GRNST,rr-tr alg mat,scat dol ool anhy PKST,v DOL rich cmt,fr-g intxl-ool POR,tr scat alg POR,fr-g dull-bri yel FLOR,fr-g brn-rr dkbrn STN,scat blk dd o STN,fr-g mod fast-fast stmg CUT"

6460.00 6480.00 "LS AA,occ grdg to v lmy sl ool-alg DOL GRNST frag,LS PKST AA,POR-FLOR-STN-CUT"

6480.00 6500.00 "LS tan-brn,rr crm,micxl-vfxl,gran-micsuc,pred oom-ooc GRNST w/tr crpxl-occ dns ool PKST,tr alg mat,DOL rich cmt,rr trnsl-wh CHT,tr ANHY xl-incl-occ POR FL,fr-g intxl-ool-v rr alg POR,fr-g dull-bri yel FLOR,fr-g brn-tr spty blk STN,g mod fast-fast CUT "

6500.00 6540.00 "LS AA,v DOL rich cmt,scat ANHY xl-incl-tr POR fl,fr-g intxl-fr ool-v rr alg POR,fr-g dull-bri yel FLOR,fr-g ltbrn-brn STN,tr spty blk dd o STN,fr-g slow-fast CUT"

DEPTH	LITHOLOGY

6540.00 6600.00 "LS tan-brn,rr crm,micxl-vfxl,gran-micsuc,pred oom-ooc GRNST w/tr ool crpxl-dns PKST,v rr alg mat,DOL rich cmt,occ grdg rr brn sl ool DOL GRNST,rr trnsl-wh CHT,tr ANHY incl-POR fl,fr-g intxl-ool POR,g dull-bri yel FLOR,fr brn-tr blk STN,g mod fast st CUT "

6600.00 6620.00 "LS tan-brn,rr crm,micxl-vfxl,gran-micsuc,occ crpxl-dns,pred oom-ooc GRNST w/tr ool PKST,v rr alg mat,DOL rich cmt-rr brn sl ool DOL GRNST frag,rr trnsl-wh CHT,tr ANHY xl-incl-POR fl,fr-g intxl-ool POR,g dull-bri yel FLOR,fr brn-tr blk STN,g mod fast CUT "

6620.00 6640.00 "LS AA,w/scat DOL AA,POR-FLOR-STN-CUT AA"

6640.00 6660.00 "LS AA,v DOL rich cmt,scat ANHY xl-incl-tr POR fl,fr-g intxl-fr ool-v rr alg POR,fr-g dull-bri yel FLOR,fr-g ltbrn-brn STN,tr spty blk dd o STN,fr-g slow-fast CUT"

6660.00 6680.00 "LS AA,w/v DOL rich cmt AA,sl incr CHT frag,POR-FLOR-STN-CUT AA"

6680.00 6700.00 "LS tan-brn,rr crm,micxl-vfxl,gran-micsuc,pred oom-ooc GRNST w/tr ool crpxl-dns PKST,v rr alg mat,DOL rich cmt,occ grdg rr brn sl ool DOL GRNST,rr trnsl-wh CHT,tr ANHY incl-POR fl,fr-g intxl-ool POR,g dull-bri yel FLOR,fr brn-tr blk STN,g mod fast st CUT "

6700.00 6720.00 "LS AA,v DOL rich cmt,tr trnsl-wh-occ bf CHT frag,POR-FLOR-STN-CUT AA"

6720.00 6740.00 "LS AA,decr CHT FRAG,n-v rr alg mat-POR,DOL rich cmt,tr-g ool-intxl POR,n-v rr alg POR,fr-g bri yel FLOR,fr-g brn-mbrn STN,scat spty blk dd o STN,fr-g mod fast-fast stmg CUT"

6740.00 6760.00 "LS tan-brn,crm,micxl-vfxl,gran-micsuc,pred oom-ooc GRNST w/tr ool crpxl-dns PKST,v rr alg mat,DOL rich cmt,occ grdg rr brn sl ool DOL GRNST,rr trnsl-wh CHT,tr ANHY incl-POR fl,fr-g intxl-ool POR,g dull-bri yel FLOR,fr brn-tr blk STN,g mod fast stmg CUT "

6760.00 6780.00 "LS AA,v DOL rich cmt-v rr mbrn-brn vfxl DOL GRNST,v rr trnsl-wh-occ bf CHT frag,tr ANHY incl-tr POR fl,POR-FLOR-STN-CUT AA"

6780.00 6800.00 "LS AA,sl incr anhy-ool PKST, DOL rich cmt,scat ANHY xl-incl-tr POR fl,fr-g intxl-ool POR,fr-g dull-bri yel FLOR,fr-g ltbrn-brn STN,tr spty blk dd o STN,fr-g slow-fast stmg CUT"

6800.00 6820.00 "LS AA,v dol-DOL rich cmt,scat ANHY xl-incl-tr POR fl,POR-FLOR-STN-CUT"

6820.00 6840.00 "LS tan-brn,crm ip,micxl-vfxl,gran-micsuc,pred oom-ooc GRNST w/scat ool crpxl PKST,v rr alg mat,DOL rich cmt-v rr sl ool DOL GRNST frag,rr trnsl-wh CHT,tr ANHY incl-POR fl,fr-g intxl-ool POR,g dull-bri yel FLOR,fr brn-tr blk STN,g mod fast stmg CUT "

6840.00 6860.00 "LS AA,sl incr ool-fos anhy dns PKST,w/thn scat v lmy DOL GRNST frag-incl,n-v rr alg mat,tr-fr intxl-ool POR,v rr alg POR,fr-g dull-bri yel FLOR,g lt-mbrn STN,tr blk dd o STN,fr-g mod fast-fast stmg CUT"

6860.00 6880.00 "LS tan-brn,crm,micxl-vfxl,gran-micsuc,pred oom-ooc GRNST w/tr ool crpxl-dns PKST,v rr alg mat,v DOL rich cmt,scat v rr trnsl-wh CHT,tr ANHY incl-POR fl,fr-g intxl-ool POR,g dull-bri yel FLOR,fr brn-mbrn STN,tr blk dd o STN,fr-g mod fast-fast stmg CUT "

6880.00 6900.00 "LS AA,v dol-DOL rich cmt,scat ANHY xl-incl-tr POR fl,POR-FLOR-STN-CUT"

DEPTH	LITHOLOGY

6900.00 6920.00 "LS tan-brn-mbrn,occ crm-wh,crpxl-vfxl,gran-micsuc,pred ooc-oom GRNST w/scat plty dns sl ool PKST,v dol-DOL rich cmt,scat trnsl-clr CHT frag,rr ANHY xl-incl-rr POR fl,g intxl-ool POR,g dull-bri yel FLOR,fr-g brn-mbrn STN,rr blk STN,fr-g mod fast-fast CUT"

6920.00 6940.00 "LS AA,decr plty PKST,sl incr blk dd o STN,FLOR-STN-CUT AA"

6940.00 6960.00 "LS tan-brn,crm-wh ip,crpxl-vfxl,gran-micsuc,pred ooc-oom GRNST w/rr plty dns sl ool PKST,sl DOL rich cmt,rr scat trnsl-clr CHT frag,sl anhy-rr ANHY xl-incl-v rr POR fl,g ool-intxl POR,fr-g dull-bri yel FLOR,fr-g brn-mbrn-
rr blk STN,fr-g mod fast-fast CUT"

6960.00 6980.00 "LS AA,w/v thn rr v lmy DOL GRNST frag-incl,tr-g intxl-ool POR,fr-g dull-bri yel FLOR,g lt-mbrn STN,tr blk dd o STN,fr-g mod fast-fast stmg CUT"

6980.00 6990.00 "LS AA,w/rr DOL AA,POR-FLOR-STN-CUT AA"

6990.00 7000.00 "LS tan-brn,mbrn ip,occ crm-wh,crpxl-vfxl,gran-micsuc,pred ooc-oom GRNST w/rr plty dns sl ool PKST,sl DOL rich cmt,rr trnsl-clr CHT frag,rr ANHY xl-incl-rr POR fl,fr-g ool-intxl POR,fr-g dull-bri yel FLOR,g brn-mbrn STN,rr blk STN,fr-g mod fast-fast CUT"

7000.00 7020.00 "LS tan-crm-brn,occ mbrn,ltgybrn-wh,vfxl-gran-crpxl,occ micsuc,pred GRNST AA w/tr dns sl ool-rr chky plty PKST,sl DOL cmt/rr brn micxl-micsuc DOL frag-incl,rr CHT & ANHY AA-tr POR fl,POR-FLOR AA,g brn-mbrn STN/incr blk pp STN,g mod fast-fast stmg mlky CUT"

7020.00 7050.00 "LS AA,vfxl-sl gran-grdg to crpxl,occ micsuc,pred ooc-oom GRNST intbd/dns sl ool & rr chky plty PKST,sl DOL cmt-occ grdg to lmy DOL,rr ANHY xl/tr POR fl,vrr CHT AA,POR-FLOR AA,fr-g ltbrn-tr mbrn STN-rr blk pp STN,g mod fast-slow stmg mlky CUT"

7050.00 7080.00 "LS tan-crm-ltbrn,occ brn,wh,vfxl-gran-micxl,crpxl,ooc-sl oom GRNST/scat dns sl ool-rr chky plty PKST,sl DOL cmt-grdg to lmy DOL,anhy/tr xl ANHY-POR fl,rr CHT AA,fr- g intxl/tr oom-ooc POR,g mod bri-dull/tr bri yel FLOR,STN AA/sl incr blk pp STN,CUT AA"

7080.00 7100.00 "LS tan-ltbrn-crm,occ brn,wh,vfxl-gran-micsuc,crpxl,ool-oom GRNST intbd/dns sl ool-rr chky plty PKST,sl DOL cmt/tr brn micxl-micsuc DOL GRNST frag,anhy/tr xl ANHY-POR fl,tr trnsl CHT,POR-FLOR AA,g brn-mbrn STN/tr blk pp STN,g mod fast-fast stmg mlky CUT"

7100.00 7110.00 "LS tan-crm-brn,occ wh,vfxl-crpxl-gran,occ micsuc,ool-oom GRNST intbd/dns sl ool-tr chky plty PKST,rr DOL GRNST frag AA-grdg to calc DOL,anhy/tr xl ANHY frag-POR fl,tr trnsl CHT,g intxl-fr ooc-oom-rr pp vug POR,FLOR AA,g-fr ltbrn-brn-tr blk pp STN,CUT AA"

7110.00 7130.00 "LS AA,vfxl-gran,micxl-crpxl,occ micsuc,pred GRNST AA intbd/decr PKST frag AA,vrr brn micsuc-gran DOL GRNST incl,anhy/tr xl ANHY frag-POR fl,tr trnsl-wh CHT frag-incl,g-fr intxl-ooc-sl oom POR,g even bri-dull yel FLOR,g-fr ltbrn-brn-tr blk pp STN,CUT AA"

7130.00 7150.00 "LS tan-ltbrn-crm,occ brn,wh,vfxl-gran-crpxl,occ micsuc,GRNST AA intbd/PKST AA,tr DOL GRNST AA-grdg to calc DOL,anhy/tr xl ANHY frag-POR fl,tr CHT AA,POR-FLOR AA,g-fr ltbrn/incr brn-tr blk pp STN,g fast stmg mlky CUT"

DEPTH	LITHOLOGY

7150.00 7170.00 "LS AA,pred ooc-oom GRNST/tr DOL cmt-rr brn micsuc-gran DOL GRNST frag-incl occ grdg to calc DOL,scat dns-chky plty PCKST frag,sl anhy/rr xl ANHY frag,tr trnsl-wh CHT,g-fr inxl-ooc-tr oom POR/rr fl,FLOR_STN AA,g mod fast-slow stmg mlky CUT"

7170.00 7190.00 "LS AA,incr brn,pred ooc-oom GRNST/tr DOL cmt-rr DOL GRNST AA,scat dns-sl incr chky plty PCKST frag,anhy/rr xl ANHY frag,tr CHT AA,g-fr intxl-ooc-sl oom POR/rr fl,g even mod bri-bri yel FLOR,g-fr lt-m brn STN/tr blk pp STN,g mod fast-sl blooming mlky CUT"

7190.00 7200.00 "LS AA,pred GRNST AA/decr dns-tr scat chky plty PCKST,anhy/rr xln-tr POR fl,scat trnsl-wh CHT frag-incl,POR-FLOR-STN-g slow-mod fast stmg mlky CUT"

7200.00 7220.00 "LS tan-crm-brn,occ wh,vfxl-gran-crpxl,micsuc,ool-oom GRNST intbd/scat PKST AA,incr DOL GRNST frag AA-grdg to calc DOL,anhy/rr xl ANHY frag-POR fl,tr CHT AA,POR AA,decr FLOR AA,STN,g fast stmg CUT"

7220.00 7230.00 "DOL mbrn-brn,micsuc-gran-micxl,DOL GRNST occ intbd in LS GRNST AA,calc-lmy-grdg to dol LS,fr-g intxl POR,g mod bri-bri yel FLOR,g brn-occ dk brn STN,g mod fast stmg CUT"

7230.00 7250.00 "LS tan-brn-crm,occ wh,micxl-vfxl-gran,crpxl-micsuc,ool-oom GRNST/intbd-scat dns sl oom-chky plty PKST,tr DOL cmt-rr DOL GRNST AA,anhy/rr xl-tr ANHY POR fl,tr CHT AA,g-fr intxl-ooc-oom POR,g even bri yel FLOR,fr-g ltbrn-brn/tr dkbrn & blk pp STN,CUT AA"

7250.00 7270.00 "LS tan-crm,brn,occ wh,gran-oom-crpxl,vfxl-micsuc,ool-oom GRNST/tr intbd-scat dns sl oom-chky plty PKST,tr DOL cmt,anhy/rr xl-tr ANHY POR fl,tr CHT AA,g-fr ooc-oom-intxl POR,g even mod bri-bri yel FLOR,STN AA,g fast-blooming mlky CUT"

7270.00 7290.00 "LS AA,gran-oom-crpxl,vfxl-micsuc,ool-oom GRNST/tr intbd-scat dns sl oom-chky plty PKST,tr DOL cmt,anhy AA/tr POR fl,rr trnsl-wh CHT,g ooc-oom-intxl POR,g even mod bri-bri yel FLOR,g-fr ltbrn-brn STN/incr blk dd o STN,g fast stmg mlky CUT"

7290.00 7310.00 "LS AA,gran-oom-micsuc,vfxl-micxl-crpxl,oom-ooc-ool GRNST/tr intbd-scat dns oom-chky plty PKST,tr sl DOL cmt,anhy/tr POR fl,g-fr ooc-oom-intxl POR,g even bri-mod bri yel FLOR,fr-g ltbrn-g scat brn & dkbrn STN/incr pp blk dd o STN,g fast stmg mlky CUT"

7310.00 7330.00 "LS AA,oom-ooc-sl ool GRNST/decr scat dns-chky plty PCKST,sl dol ip,anhy/vrr xl incl-tr POR fl,g-fr oom-ooc-sl ool & intxl POR,fr-g ltbrn/scat brn-occ dkbrn STN,tr scat blkpp dd o STN,g fast stmg-sl blooming mlky CUT"

7330.00 7350.00 "LS tan-brn-crm,occ mbrn,wh,gran-oom-crpxl,vfxl-micsuc,oom-ooc-sl ool GRNST/tr scat PKST AA,v sl dol ip,sl anhy/tr ANHY POR fl,g oom-ooc-intxl POR,g even bri-mod bri yel FLOR,fr-g ltbrn-brn/scat dkbrn & blk dd o STN,g fast stmg-sl blooming mlky CUT"

7350.00 7370.00 "LS brn-tan-ltbrn,crm,occ wh,micxl-gran,crpxl-sl micsuc,pred dns sl chky GRNST-tr scat oom-ooc frag,sl dol,scat-intbd sl agl-chky PCKST,anhy-tr xl incl-POR fl,rr mic fos incl,tt-fr intxl-tr pp agl/rr oom POR,g bri yel FLOR,g brn STN,g fast stmg mlky CUT"

7370.00 7390.00 "LS tan-brn-crm,occ mbrn,wh,gran-oom-crpxl,vfxl-micsuc,oom-ooc-sl ool GRNST/tr scat dns-chky plty PKST,v sl dol,sl anhy AA,g oom-ooc-intxl POR,g even bri-mod bri yel FLOR,fr-g ltbrn-brn/scat dkbrn & blk dd o STN,g fast stmg-sl blooming mlky CUT"

DEPTH	LITHOLOGY

7390.00 7400.00 "LS AA,oom-ooc-sl ool GRNST/tr scat dns-chky plty PCKST,v sl dol,anhy/tr POR fl-rr xl,tr trnsl-wh CHT incl-frag,POR-FLOR-STN,g fast stmg mlky CUT"

7400.00 7420.00 "LS AA,oom-ooc-sl ool GRNST/decr scat dns-chky plty PCKST,v sl dol,anhy/rr xl incl-tr POR fl,g-fr oom-ooc-sl ool & intxl POR,fr ltbrn-g scat brn-occ dkbrn/scat blk pp dd o STN,g slow blooming-fast stmg mlky CUT"

7420.00 7440.00 "LS tan-brn-crm,occ mbrn,wh,gran-oom-crpxl,vfxl-micsuc,oom-ooc-ool GRNST/tr scat-intbd dns-rr chky plty PKST,v sl dol,anhy AA,g oom-ooc-intxl POR,g even mod bri-bri yel FLOR,STN AA,g fast stmg-blooming mlky CUT"

7440.00 7460.00 "LS AA,pred oom-ooc-sl ool GRNST,tr scat dns sl oom-rr chky plty PCKST,occ v sl dol,anhy/tr xln & POR fl,rr trnsl-wh CHT incl,g oom-ooc/tr fr intxl POR,g even mod bri/scat bri yel FLOR,STN AA,g-fr slow blooming-fast stmg mlky CUT"

7460.00 7480.00 "LS tan-brn-gybrn,occ crm,micxl-vfxl,occ gran-micsuc,crpxl ip,pred ooc-oom GRNST w/scat dns-sl fos-ool-occ plty PKST,scat trnsl-clr CHT frag,dol-DOL rich cmt,tr-g intxl-ool POR,fr-g dull-bri yel FLOR,fr-g ltbrn-blk STN,fr-g mod fast stmg CUT"

7480.00 7500.00 "LS AA,decr gybrn,incr PKST,sl decr blk STN,POR-FLOR-STN-CUT AA"

7500.00 7520.00 "LS AA,pred ooc-oom GRNST,w/scat occ plty v sl ool PKST,sl-v dol w/occ v rich DOL cmt,scat trnsl-clr CHT frag,scat ANHY xl-incl-v rr POR fl,fr-g dull-bri yel FLOR,g brn-ltbrn STN,tr-fr dkbrn-blk dd o STN,fr-g fast-mod fast stmg CUT"

7520.00 7550.00 "LS tan-brn-crm,wh-ltgybrn ip,crpxl-vfxl,occ gran-micsuc,pred intbd ooc-oom GRNST & sl fos-ool-occ plty PKST,scat trnsl-clr CHT frag,dol-DOL rich cmt,tr ANHY xl-incl-POR fl,tr-g intxl-ool POR,g dull-bri yel FLOR,fr-g ltbrn-blk STN,fr-g mod fast stmg CUT"

7550.00 7580.00 "LS AA,sl incr wh-crm plty PKST,POR-FLOR-STN-CUT AA"

7580.00 7590.00 "LS AA,sl decr plty PKST,POR-FLOR-STN-CUT AA,w/v rr v lmy-LS rich cmt brn vfxl DOL GRNST frag,tr-g intxl POR,fr-g dull-bri yel FLOR,fr brn STN,fr-g mod fast stmg CUT"

7590.00 7630.00 "LS tan-brn-ltgy,crm-wh ip,crpxl-vfxl,occ gran-micsuc,pred sl ooc-oom GRNST w/tr sl fos-ool-occ plty PKST,scat trnsl-clr CHT frag,dol-DOL rich cmt,tr ANHY xl-incl-POR fl,fr-g intxl-tr ool POR,g dull-bri yel FLOR,fr-g ltbrn-blk STN,fr-g mod fast stmg CUT"

7630.00 7650.00 "LS tan-brn-ltgy,crm-wh ip,AA,occ incr crpxl-v sl fos-sl ool-plty PKST,tr CHT frag,sl incr ANHY xl-incl-POR fl,fr-g intxl-tr ool POR,g dull-bri yel FLOR,fr-g ltbrn-brn STN,tr-fr blk dd o STN,fr-g mod fast-fast stmg CUT"

7650.00 7680.00 "LS tan-brn,wh-ltgy ip,crpxl-vfxl,occ gran-micsuc,pred intbd ooc-oom GRNST & sl fos-ool-occ plty PKST,scat trnsl-clr CHT frag,dol-DOL rich cmt,tr ANHY xl-incl-POR fl,tr-g intxl-ool POR,g dull-tr bri yel FLOR,fr-g ltbrn-blk STN,fr-g mod fast-fast stmg CUT"

7680.00 7700.00 "LS tan-brn-ltgy,crm-wh ip,AA,incr crpxl-v sl ool-plty-sl arg PKST,incr trnsl-bf CHT frag,v sl incr ANHY xl-incl-POR fl,fr-g intxl-ool POR,g dull-fr bri yel FLOR,fr-g ltbrn-brn STN,tr-fr blk dd o STN,fr-g mod fast-fast stmg CUT"

DEPTH	LITHOLOGY

7700.00 7710.00 "LS AA,CHT AA,POR-FLOR-STN-CUT AA"

7710.00 7740.00 "LS tan-brn,wh-ltgy ip,crpxl-vfxl,occ gran-micsuc,pred intbd ooc-oom GRNST & sl fos-ool-occ plty PKST,scat trnsl-clr CHT frag,dol-DOL rich cmt,tr ANHY xl-incl-POR fl,tr-g intxl-ool POR,g dull-tr bri yel FLOR,fr-g ltbrn-blk STN,fr-g mod fast-fast stmg CUT"

7740.00 7750.00 "LS AA,CHT AA,POR-FLOR-STN-CUT AA"

7750.00 7770.00 "LS tan-crm-ltbrn,ltgybrn,occ wh,brn,vfxl-gran,crpxl,occ micsuc,oom-ooc GRNST,scat-intbd dns-chky plty PCKST,anhy/rr xln-POR fl,scat trnsl-tan CHT frag-incl,vrr brn DOL GRNST frag,g-fr oom-ooc/fr intxl POR,g even dull-mod bri yel FLOR,STN & CUT AA"

7770.00 7790.00 "LS AA,oom-ooc GRNST/tr scat-occ intbd dns-decr chky plty PCKST,scat-occ intbd bf-trnsl CHT,anhy/sl incr POR fl-tr xln frag,fr-g oom-ooc/fr-tr intxl POR,g even mod bri/scat bri yel FLOR,fr-g ltbrn-brn/scat dkbrn & blk pp dd o STN,g mod fast-fast stmg CUT"

7800.00 7820.00 "LS AA,vfxl-gran,crpxl,occ micsuc,oom-ooc GRNST/scat-occ intbd dns-chky plty PCKST,anhy/tr POR fl-rr xl frag,scat trnsl-tan CHT frag-incl,g-fr oom-ooc/tr intxl POR,g even dull-mod bri yel FLOR,fr-g ltbrn/tr brn & blk pp dd o STN,g fast stmg mlky CUT"

7820.00 7830.00 "LS AA,pred oom-ooc GRNST,tr scat sl ooc-oom dns-chky plty PCKST,anhy/tr POR fl-rr xl frag,scat CHT AA,POR-FLOR-STN-CUT AA"

7830.00 7850.00 "LS tan-ltbrn-crm,occ brn,wh,gran-oom-vfxl,crpxl,sl micsuc,oom-ooc GRNST,tr PCKST AA/sl incr chky plty frag-prtgs,sl anhy/tr POR fl-vrr xl ANHY frag,decr CHT AA,g-fr oom-ooc-intxl POR,g mod bri-dull yel FLOR,g ltbrn-brn/tr dkbrn & blk pp STN,g fast CUT AA"

7850.00 7870.00 "LS tan-ltbrn-crm,occ brn,wh,gran-oom-vfxl,crpxl,sl micsuc,pred oom-ooc GRNST/v sl dol cmt-rr grdg to lmy DOL,tr PCKST AA,anhy/tr POR fl-vrr xl ANHY frag,tr CHT AA,g-fr oom-ooc-intxl POR,FLOR AA,g ltbrn-brn/scat tr dkbrn & blk pp STN,g fast stmg mlky CUT"

7870.00 7880.00 "LS AA,pred oom-ooc GRNST,tr scat sl ooc-oom dns-chky plty PCKST,anhy/sl incr POR fl-rr xl frag,tr scat bf-trnsl CHT frag-incl,POR-FLOR-STN-CUT AA"

7880.00 7900.00 "LS AA,incr crpxl,occ micsuc,oom-ooc GRNST/incr scat-intbd dns-tr chky plty PCKST,tr anhy POR fl,tr scat trnsl-tan CHT frag-incl,g-fr oom-ooc/tr intxl POR,g even mod bri/scat bri yel FLOR,fr-g ltbrn-brn/sact blk pp dd o STN,g mod fast-fast stmg mlky CUT"

7900.00 7920.00 "LS tan-ltbrn-crm,occ brn,wh,gran-oom-vfxl,crpxl,sl micsuc,oom-ooc GRNST,tr PCKST AA/tr chky plty frag-prtgs,sl anhy/tr POR fl-vrr xl ANHY frag,decr CHT AA,g-fr oom-ooc-intxl POR,g mod bri-dull yel FLOR,g ltbrn-brn/tr dkbrn & blk pp STN,g fast stmg CUT"

7920.00 7940.00 "LS AA,gran-oom-vfxl,crpxl,sl micsuc,oom-ooc GRNST,tr PCKST AA,sl anhy/tr POR fl-vrr xl ANHY frag,tr-rr CHT AA,g-fr oom-ooc-intxl POR,g mod bri-bri yel FLOR,fr-g ltbrn-tr scat brn/scat dkbrn & blk pp STN,g fast stmg mlky CUT"

7940.00 7960.00 "LS AA,pred oom-ooc GRNST,tr scat-occ intbd dns-vrr chky plty PCKST,anhy/tr POR fl-vrr xl frag,tr scat bf-trnsl CHT frag-incl,POR-FLOR-STN-g mod fast-fast stmg mlky CUT"

DEPTH	LITHOLOGY

7960.00 7980.00 "LS tan-crm-ltbrn,ltgybrn,occ wh,brn,vfxl-gran,crpxl,occ micsuc,oom-ooc GRNST,sl incr scat-intbd dns-vrr chky plty PCKST,anhy AA,scat CHT AA,g oom-ooc/fr intxl POR,g even mod bri-scat bri yel FLOR,fr ltbrn-tr brn & blk STN,g-fr mod fast-slow stmg mlky CUT"

7980.00 8000.00 "LS AA,pred oom-ooc GRNST,tr scat-intbd sl ooc-oom dns-chky plty PCKST,anhy/tr POR fl-vrr xl frag,scat CHT AA,POR-FLOR-STN-CUT AA"

8000.00 8020.00 "LS tan-ltbrn-crm,brn,occ wh,gran-oom-vfxl,crpxl,sl micsuc,pred oom-ooc GRNST/tr scat-intbd PCKST AA,sl anhy/tr POR fl-vrr xl frag,tr CHT AA,g-fr oom-ooc-intxl POR,FLOR AA,fr-g ltbrn-incr brn-scat dkbrn & blk pp dd o STN,g fast stmg-sl blooming mlky CUT"

8020.00 8040.00 "LS AA,pred oom-ooc GRNST intbd/dns-occ chky plty PCKST,anhy/tr anhy POR fl-vrr xl frag,tr CHT AA,POR-FLOR-STN AA,g-fast stmg mlky CUT"

8040.00 8060.00 "LS tan-crm-ltbrn,brn,occ wh,vfxl-oom-gran,crpxl,occ micsuc,oom-ooc GRNST,tr scat-intbd dns-chky plty PCKST,anhy AA,tr CHT AA,g oom-ooc/fr-g intxl POR,g even mod bri-scat bri yel FLOR,fr-g ltbrn-brn/scat blk pp dd o STN,g-fr mod fast-fast stmg mlky CUT"

8060.00 8070.00 "LS AA,oom-ooc GRNST intbd/dns sl ool-chky plty PCKST,anhy AA,tr CHT AA,g oom-ooc/rr pp agal & fr-g intxl POR,FLOR-STN-CUT AA"

8070.00 8080.00 "LS AA,oom-ooc GRNST/decr PCKST AA,anhy/tr POR fl,POR-FLOR-STN-CUT AA"

8080.00 8100.00 "LS tan-crm-ltbrn,occ wh,rr brn,vfxl-gran,crpxl,occ micsuc,oom-ooc GRNST,tr-rr scat-intbd dns-chky plty PCKST,anhy AA,tr-rr CHT AA,g oom-ooc/g-tr intxl POR,g even mod bri-scat bri yel FLOR,fr ltbrn-rr brn/tr blk pp STN,g mod fast stmg mlky CUT"

8100.00 8120.00 "LS tan-ltbrn,crm,occ wh-ltgy,micxl-vfxl,occ crpxl,gran-suc,pred ooc-oom GRNST,occ dns-ool-sl plty PKST,sl DOL cmt,tr trnsl-bf CHT frag-ANHY xl-incl,fr-g intxl-tr ool POR,fr-g dull-bri yel FLOR,fr-g brn STN,tr blk dd o STN,g mod fast-fast stmg CUT"

8120.00 8160.00 "LS AA,incr tan,sl incr PKST,scat clr-trnsl-bf CHT frag,v sl incr ANHY xl-incl-rr POR fl,sl decr POR,g dull-tr bri yel FLOR,tr-fr ltbrn-brn STN,tr-rr blk dd o STN,fr mod fast-fast stmg CUT"

8160.00 8190.00 "LS bf-tan,mbrn ip,occ crm-wh,crpxl-vfxl,gran-dns,occ suc,ooc-oom GRNST ip,incr ool occ plty PKST,DOL rich cmt,scat trnsl-bf CHT frag-ANHY xl-POR fl,fr intxl-tr ool POR,fr-g dull-bri yel FLOR,tr-fr ltbrn-brn STN,rr-tr blk dd o STN,fr-g mod fast stmg CUT"

8190.00 8200.00 "LS AA,pred tan,occ brn-gybrn,crm-wh ip,v sl plty,fr ool-intxl POR,fr-g bri-dull yel FLOR,fr brn-tr blk STN,fr-g mod fast-fast stmg CUT"

8200.00 8220.00 "LS bf-tan-crm,mbrn-ltgy-wh ip,,crpxl-vfxl,dns-gran-micsuc,ooc-oom GRNST w/intbd ool occ plty PKST,DOL rich cmt,scat trnsl-bf CHT frag-ANHY xl-POR fl,fr-g intxl-ool POR,fr-g dull-bri yel FLOR,tr-fr ltbrn-brn STN,rr-tr blk dd o STN,fr-g mod fast stmg CUT"

8220.00 8240.00 "LS AA,incr brn-blk STN,POR-FLOR-CUT AA"

8240.00 8250.00 "LS AA,sl incr plty & ool PKST,sl decr blk dd o STN,fr intxl-fr-g ool POR,fr-g dull-bri ye FLOR,fr brn STN,tr-fr blk dd o STN,fr-g mod fast-fast stmg CUT"

FORMATION TOPS

OPERATOR: MOBIL
WELL NAME: RATHERFORD UNIT #13-34 SE 1-A HORIZONTAL LATERAL LEG #3

FORMATION NAME		SAMPLES MEASURED DEPTH	SAMPLES TRUE VERTICAL DEPTH	DATUM KB:4694'
LOWER ISMAY		5468'	5365'	-671'
GOTHIC SHALE		5404'	5396'	-702'
DESERT CREEK		5428'	5414'	-720'
DC 1-A ZONE		5435'	5418'	-724'
DC 1-B ZONE		5466'	5435'	-741'

GEOLOGICAL SUMMARY

AND

ZONES OF INTEREST

The Mobil Exploration and Production U.S. Inc., Ratherford Unit #13-34 Southeast Horizontal Lateral Leg 3 was a re-entry of the Mobil Ratherford Unit #13-34 located in Section 13, T41S, R23E. The northwest Lateral Leg #1 was drilled in May of 1995. Lateral Leg #3 was begun on September 27, 1997'. The curve section was completed on September 29, 1997 at a measured depth of 5502', 5422' true vertical depth, and the lateral section was begun in the 1-A porosity zone. The lateral reached a measured depth of 8416' true vertical depth of 5418.5', with a horizontal displacement of 3000.2' and true vertical plane of 124.4 degrees, on October 3, 1997, in the upper Desert Creek 1-A zone. The only minor problems of note encountered while drilling the lateral, was the very minor water flow encountered in the lateral. The water flow remained at a very low rate, 4 to 5 barrels per hour through out the lateral section. This lateral used fresh water and then an oil and water emulsion with polymer sweeps as the drilling fluid. The background gases noted on the accompanying mud log were moderately high until reaching a horizontal displacement of 340', but then decreased, and remained low to the end of the lateral section. The samples had good oil shows throughout the drilling of the lateral in the 1-A porosity zone and decreased as the well path approached the top and base of the porosity zone.

The primary objectives of the Ratherford Unit #13-34 Leg 3 horizontal lateral were the effective porosity, staining and reservoir properties in 1-A zone of the Desert Creek Member of the Upper Paradox Formation. The lower 1/3 of the Upper Ismay, the entire Lower Ismay, Gothic Shale, and transition zone at the top of the Desert Creek were drilled during the curve section of the lateral. Kick off point for this lateral was 5303', measured depth and 5303' true vertical depth, in the lower portion of the Upper Ismay member of the Paradox Formation.

The lower portion of the Upper Ismay was predominately white to tan, occasionally cream to brown, cryptocrystalline to microcrystalline, chalky to clean and slightly argillaceous to occasionally silty limestone with scattered anhydrite crystals and occasional fracture filling, with translucent to brown to smoky gray and a few dark brown chert fragments and occasional fossil remnants. Also present were thin, slightly marly to argillaceous, gray brown to dark brown, cryptocrystalline to microcrystalline, slightly calcareous dolomites, also very thin dark gray to black, carbonaceous, slightly calcareous to dolomitic shales and some very thin, gray, very limy siltstone inclusions to laminations near the base. While drilling the lower Upper Ismay, there was only very slight fracture porosity noted with no visible fluorescence, stain or cut noted. No gas increases were noted. The very dolomitic limestones at the base of the Upper Ismay were marked by the very thin, carbonaceous, dolomitic shale of the Hovenweep.

The top of the Lower Ismay was picked at 5372' measured depth, 5365' true vertical depth, at the base of the Hovenweep Shale. The Lower Ismay was predominately limestone, which was tan to cream to white, occasionally light gray to brown, some dark brown, cryptocrystalline to microcrystalline, dense, chalky, occasionally argillaceous, slightly dolomitic and anhydritic with scattered brown to dark brown to black chert and very rare fossil remnants. Rare scattered intercrystalline porosity was noted, but no visible stain, fluorescence or cut was seen. Scattered throughout the Lower Ismay were thin interbedded dark brown to brown, limy, microcrystalline, shaley, argillaceous dolomites and dark gray to gray, calcareous to slightly dolomitic, micaceous

shales. Through out the Lower Ismay were very silty, dolmitic limestones, which graded to light gray to cream, very limy, slightly micaceous siltstone inclusions and partings. These siltstones have been noted in other wells in this area in the basal Upper Ismay to Lower Ismay zones. The siltstone is the remnant of a slump feature from a higher platform to the east, present during middle Lower Ismay to early Upper Ismay deposition. The lower most portion of the Lower Ismay, just above the Gothic Shale, was a light gray to cream to white limestone, cryptocrystalline to microcrystalline, chalky, anhydritic, dolomitic, with thin brown to dark brown, very shaley, cryptocrystalline to microcrystalline dolomite and dark gray to black, calcareous to dolomitic, carbonaceous shales. The thin interbedded limestones and dolomites at the base of the Lower Ismay graded in to the shales of the Gothic. No sample or gas shows were noted in the Lower Ismay.

The top of the Gothic Shale was picked at 5418' measured depth, 5397' true vertical depth and was predominantly gray to dark gray to black, silty, carbonaceous, soft to moderately firm, calcareous to slightly dolomitic and slightly micaceous. Scattered within the Gothic were very thin, cryptocrystalline to microcrystalline, earthy, limestone and dolomite partings and inclusions, with very rare scattered anhydrite crystals. The top of the Gothic is rather gradational. The drill time slowed as the top of the Gothic was penetrated and then increased throughout the middle of Gothic Shale. The top of the Gothic was picked predominantly from the slight increase in shale in the samples and the decrease in penetration rate. The increase in shale at the top of the Gothic was quite subtle, followed by a gradual increase in shale content in the samples.

The top of the Desert Creek is commonly picked at the Gothic Shale to transition zone facies change, which in occurred at a measured depth of 5450' and a true vertical depth of 5412', and was marked by a decrease in penetration rate. In this well the zone was interbedded cream to tan, some brown, slightly silty to very silty, argillaceous, dolomitic limestones, which were cryptocrystalline to microcrystalline, and tan to light brown, cryptocrystalline to microcrystalline, argillaceous in part, limy dolomite. Within the limestones and dolomites were very thin dark gray to black, dolomitic to calcareous shale and rare very limy, very thin siltstone parting were noted in the transition zone section. The limestones and dolomites had very rare intercrystalline porosity, with a trace stain, fluorescence and cut.

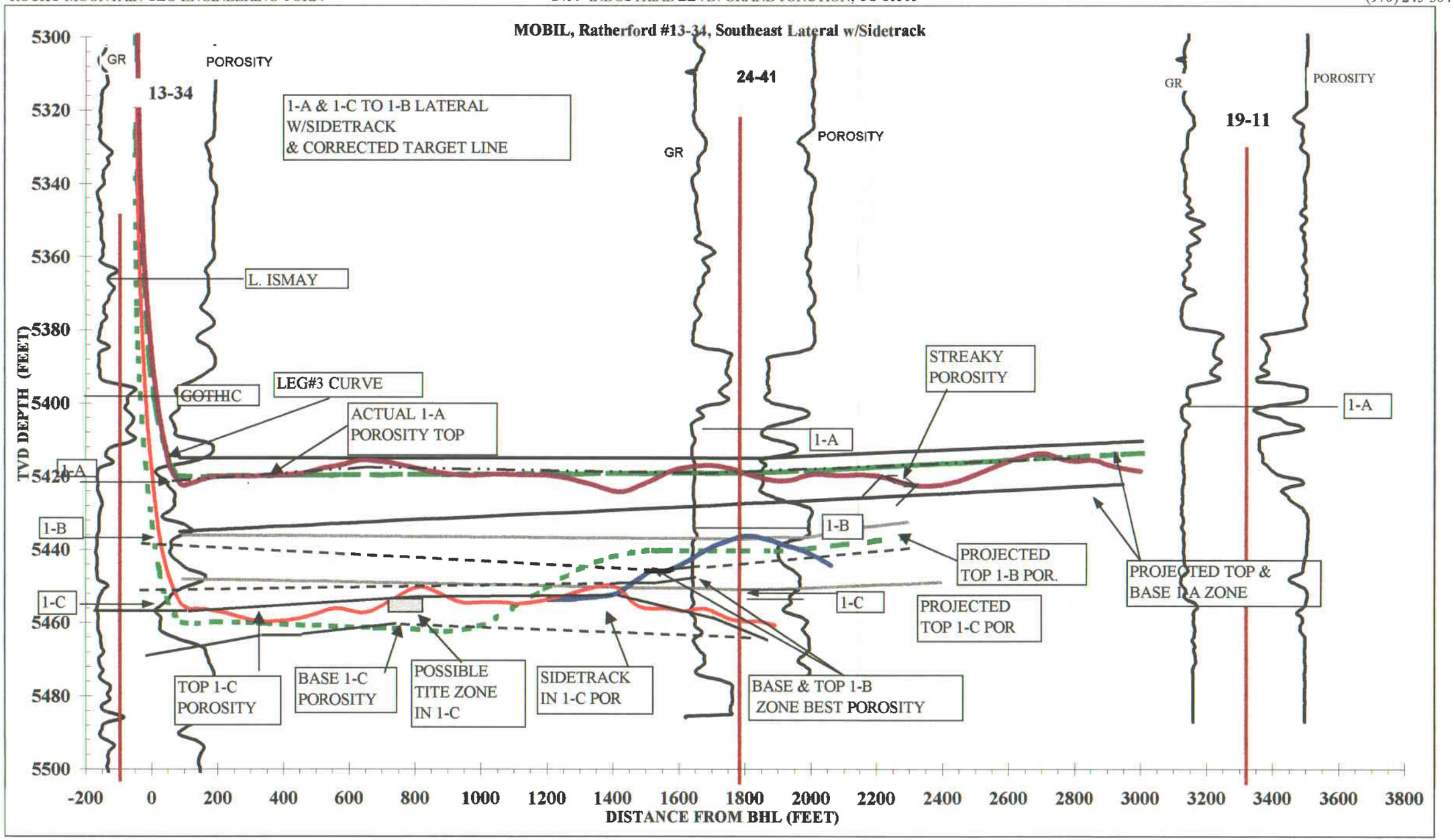
The top of the Desert Creek 1-A porosity zone was picked at 5469' measured depth, 5418' true vertical depth and was based on sample identification as well as a significant increase in the penetration rate. The top of the porosity in the 1-A was flat with the top on the porosity log for the 13-34 well. The top in this curve section of the lateral was in a slightly to very algal, clean, slightly anhydritic limestone grainstone, which had a dolomite rich cement and had minor traces of a very limy, very slightly algal dolomite grainstone with a limestone rich cement, with scattered through out were translucent to clear, occasionally buff chert fragments. Of note were the very thinly interbedded occasionally platy, anhydritic to very slightly dolomitic, tight limestone packstones near the top of the 1-A zone. The curve section was completed at a measured depth of 5502', 5422' true vertical depth, and a horizontal displacement of 91', in the algal limestone grainstone porosity, 2' below the proposed target line. The lateral section was drilled through out its length in the porosity zone of the 1-A. The lithology of the 1-A porosity zone through out its length in the lateral remained fairly consistent with very minor variations of porosity type and rock classification being noted.

The 1-A porosity zone was a slightly to very algal, light brown to tan, occasionally cream limestone grainstone, very fine to microcrystalline, with traces of dolomite cement, with scattered streaks of very limy, very slightly algal dolomite grainstone, with good visible porosity and a good sample show. Also noted within the limestones and very rare thin dolomites were occasional anhydrite inclusions and some porosity filling. Near the top of the 1-A, the limestones became a cream to tan, tight, cryptocrystalline, platy limestone packstone, with an increase in chert fragments and a marked decrease in visible porosity, as well as a decrease in the sample show. The base of the 1-A was not encountered while drilling the lateral section. A lateral change in the porosity type was noted at a measured depth of 5990', a true vertical depth of 5417' and a horizontal displacement of 540', as the

lateral approached the top of the best porosity in the 1-A. The change noted was the first occurrence of oolicastic to oomoldic material in the algal limestone, this oolicastic to oolmoldic material became the predominate porosity type as the lateral continued. The change to predominately oolicastic to oomoldic was very gradual and by 1450' the oolicatic to oolmoldic material was the predominate porosity type. The top of the 1-A zone was encountered at measured depths of 6080', 7080' and at 8120', with true vertical depths of 5416', 5417' and 5414', and horizontal displacements of 668', 1655' and 2705' respectively.

From a measured depth of 7680' to 7753', true vertical depths of 5421' to 5422.5' and horizontal displacements of 2265' to 2330' a decrease in porosity and penetration rate was noted, as the formation appeared to want to force the well path downward. The drop in true vertical depth was do to a zone of very streaky interbedded tight limestone packstone and oolicastic to oolmoldic limestone grainstones. As the well path was slowly turned upward the porosity and penetration rate increased until the top of the 1-A zone was encountered a measured depth of 8120', as noted previously. The porosity, lithology, and penetration rate remained very constant and consistent to the termination of the lateral at a measured depth of 8416', 5418' true vertical depth, and a horizontal displacement of 3000', on October 3, 1997.

In tracking the well bore through the 1-A porosity bench, the algal and intercrystalline to oolicastic to oolmoldic porosity was very good with vertical and very minor lateral gradational changes in rock classification, from predominately intercrystalline and algal porosities to tight packstones near the top, and from very good algal to very good oolicastic to oolmoldic dolomitic limestone in the best porosity of the 1-A zone. Sample shows were predominated good and stayed fairly consistent throughout the length of the lateral, except when the lateral neared and encountered the top of the 1-A zone. The background gases began high in the lateral section, until reaching 340' of horizontal displacement, then dropped significantly but then remained constant to the end of the lateral. The effective or better porosity was associated with the algal to oolicastic and oolmoldic limestone grainstone facies that had fair to good, intercrystalline and algal to oolitic porosities. Minor anhydrite plugging was noted throughout. The well produced significant very minor amounts of oil and water while drilling the 1-A zone.


MOBIL, Ratherford #13-34, Southeast Lateral w/Sidetrack
13-34
24-41
19-11
GR
POROSITY
1-A & 1-C TO 1-B LATERAL
W/SIDETRACK
& CORRECTED TARGET LINE
L. ISMAY
GOTHIC
LEG#3 CURVE
ACTUAL 1-A
POROSITY TOP
STREAKY
POROSITY
1-A
1-B
1-C
PROJECTED
TOP 1-B POR.
PROJECTED
TOP 1-C POR
PROJECTED TOP &
BASE 1-A ZONE
TOP 1-C
POROSITY
BASE 1-C
POROSITY
POSSIBLE
TITE ZONE
IN 1-C
SIDETRACK
IN 1-C POR
BASE & TOP 1-B
ZONE BEST POROSITY
TVD DEPTH (FEET)
5300
5320
5340
5360
5380
5400
5420
5440
5460
5480
5500
-200
0
200
400
600
800
1000
1200
1400
1600
1800
2000
2200
2400
2600
2800
3000
3200
3400
3600
3800
DISTANCE FROM BHL (FEET)

sperry-sun

DRILLING SERVICES

A DRESSER INDUSTRIES, INC. COMPANY

Mobil
San Juan County
Utah
Ratherford Unit
R.U. 13-34 - MWD Survey Leg 2

SURVEY REPORT

15 December, 1997

Survey Ref: svy2158

Sperry-Sun Drilling Services

Survey Report for R.U. 13-34

Mobil
San Juan County

Utah
Ratherford Unit

Measured Depth (ft)	Incl.	Azim.	Vertical Depth (ft)	Northings (ft)	Eastings (ft)	Vertical Section (ft)	Dogleg Rate (°/100ft)
Gyro							
0.00	0.000	0.000	0.00	0.00 N	0.00 E	0.00	
100.00	0.920	101.910	100.00	0.17 S	0.79 E	0.67	0.920
200.00	0.940	96.600	199.98	0.43 S	2.39 E	1.99	0.088
300.00	0.920	104.400	299.97	0.72 S	3.98 E	3.32	0.128
400.00	0.640	98.680	399.96	1.00 S	5.31 E	4.46	0.290
500.00	0.630	73.680	499.95	0.93 S	6.39 E	5.18	0.275
600.00	0.350	41.220	599.95	0.55 S	7.12 E	5.42	0.384
700.00	0.660	315.970	699.95	0.09 N	6.92 E	4.82	0.721
800.00	0.830	312.500	799.94	1.00 N	5.98 E	3.53	0.176
900.00	1.650	301.030	899.91	2.23 N	4.22 E	1.40	0.853
1000.00	1.740	303.570	999.87	3.81 N	1.72 E	-1.48	0.117
1100.00	2.080	297.530	1099.82	5.49 N	1.16 W	-4.70	0.395
1200.00	2.330	291.540	1199.74	7.07 N	4.66 W	-8.30	0.340
1300.00	2.600	291.820	1299.65	8.66 N	8.65 W	-12.25	0.270
1400.00	2.600	297.230	1399.55	10.54 N	12.78 W	-16.49	0.245
1500.00	2.550	295.240	1499.45	12.53 N	16.81 W	-20.74	0.102
1600.00	2.230	300.240	1599.36	14.46 N	20.50 W	-24.72	0.382
1700.00	2.220	295.230	1699.28	16.27 N	23.93 W	-28.42	0.195
1800.00	1.850	296.090	1799.22	17.80 N	27.13 W	-31.77	0.371
1900.00	1.600	294.980	1899.17	19.10 N	29.85 W	-34.61	0.252
2000.00	1.360	292.650	1999.14	20.15 N	32.21 W	-37.02	0.247
2100.00	1.270	294.680	2099.11	21.07 N	34.31 W	-39.16	0.101
2200.00	0.960	295.930	2199.10	21.90 N	36.07 W	-40.99	0.311
2300.00	1.250	336.320	2299.08	23.26 N	37.26 W	-42.80	0.810
2400.00	1.840	2.650	2399.04	25.86 N	37.63 W	-44.89	0.908
2500.00	2.130	10.190	2498.98	29.30 N	37.22 W	-47.04	0.390
2600.00	2.440	9.680	2598.90	33.22 N	36.54 W	-49.33	0.311
2700.00	2.460	9.230	2698.81	37.44 N	35.83 W	-51.81	0.028
2800.00	2.120	15.130	2798.73	41.34 N	35.01 W	-53.99	0.413
2900.00	1.530	20.210	2898.68	44.38 N	34.06 W	-55.47	0.611
3000.00	1.120	40.110	2998.65	46.38 N	32.97 W	-56.11	0.610
3100.00	1.170	37.700	3098.63	47.94 N	31.72 W	-56.33	0.069
3200.00	1.230	60.610	3198.61	49.27 N	30.16 W	-56.17	0.480
3300.00	1.220	75.650	3298.59	50.06 N	28.19 W	-55.34	0.321
3400.00	1.310	83.830	3398.57	50.45 N	26.03 W	-54.08	0.202
3500.00	1.040	98.790	3498.55	50.43 N	23.99 W	-52.63	0.406
3600.00	0.720	100.040	3598.53	50.19 N	22.48 W	-51.38	0.321
3700.00	0.570	105.160	3698.53	49.95 N	21.38 W	-50.43	0.161
3800.00	0.450	145.920	3798.52	49.49 N	20.68 W	-49.62	0.373
3900.00	0.550	147.210	3898.52	48.76 N	20.20 W	-48.76	0.101

Continued...

Sperry-Sun Drilling Services

Survey Report for R.U. 13-34

Mobil **Utah**
San Juan County **Ratherford Unit**

Measured Depth (ft)	Incl.	Azim.	Vertical Depth (ft)	Northings (ft)	Eastings (ft)	Vertical Section (ft)	Dogleg Rate (°/100ft)
4000.00	0.430	131.630	3998.52	48.11 N	19.66 W	-47.92	0.178
4100.00	0.340	192.590	4098.51	47.57 N	19.44 W	-47.38	0.398
4200.00	0.370	195.780	4198.51	46.97 N	19.59 W	-47.07	0.036
4300.00	0.780	218.690	4298.51	46.13 N	20.11 W	-46.84	0.462
4400.00	0.510	208.840	4398.50	45.21 N	20.75 W	-46.64	0.291
4500.00	0.510	210.850	4498.50	44.44 N	21.19 W	-46.40	0.018
4600.00	0.680	226.440	4598.49	43.64 N	21.85 W	-46.31	0.233
4700.00	0.630	211.440	4698.48	42.77 N	22.56 W	-46.20	0.178
4800.00	0.620	225.990	4798.48	41.92 N	23.24 W	-46.08	0.159
4900.00	0.410	235.120	4898.47	41.34 N	23.92 W	-46.15	0.225
5000.00	0.420	189.300	4998.47	40.77 N	24.28 W	-46.00	0.323
5100.00	0.280	241.640	5098.47	40.30 N	24.55 W	-45.85	0.333
5200.00	0.280	180.790	5198.47	39.94 N	24.77 W	-45.75	0.284
5300.00	0.480	205.980	5298.47	39.32 N	24.96 W	-45.45	0.256
MWD Survey Leg 2							
5311.00	0.490	207.310	5309.47	39.23 N	25.00 W	-45.42	0.137
5320.00	3.700	203.900	5318.46	38.93 N	25.13 W	-45.30	35.678
5330.00	6.900	160.400	5328.42	38.07 N	25.06 W	-44.64	49.225
5340.00	10.700	168.800	5338.30	36.59 N	24.68 W	-43.33	40.015
5350.00	15.400	162.500	5348.04	34.42 N	24.10 W	-41.38	49.038
5360.00	19.800	158.800	5357.57	31.57 N	23.09 W	-38.65	45.379
5370.00	24.000	158.800	5366.85	28.09 N	21.74 W	-35.24	42.000
5380.00	28.300	158.100	5375.82	23.99 N	20.12 W	-31.19	43.110
5390.00	32.400	158.600	5384.45	19.30 N	18.26 W	-26.56	41.077
5400.00	36.700	158.600	5392.68	14.02 N	16.19 W	-21.36	43.000
5410.00	40.500	159.300	5400.50	8.20 N	13.95 W	-15.66	38.250
5420.00	43.800	160.400	5407.91	1.90 N	11.64 W	-9.57	33.814
5430.00	47.800	161.400	5414.88	4.88 S	9.30 W	-3.13	40.636
5440.00	52.100	161.900	5421.31	12.14 S	6.89 W	3.71	43.170
5450.00	56.200	161.400	5427.17	19.83 S	4.34 W	10.96	41.200
5460.00	60.700	160.900	5432.40	27.89 S	1.58 W	18.60	45.201
5470.00	64.700	159.800	5436.98	36.26 S	1.41 E	26.63	41.176
5480.00	68.200	156.600	5440.98	44.77 S	4.81 E	35.06	45.663
5490.00	71.700	153.700	5444.41	53.29 S	8.76 E	43.88	44.349
5500.00	75.000	151.000	5447.27	61.77 S	13.21 E	53.02	41.927
5510.00	77.600	147.600	5449.64	70.12 S	18.17 E	62.43	42.035
5520.00	79.100	143.200	5451.66	78.18 S	23.73 E	72.06	45.628
5530.00	80.300	139.300	5453.45	85.85 S	29.89 E	81.84	40.203
5540.00	82.800	137.000	5454.92	93.22 S	36.49 E	91.72	33.801
5566.00	91.200	134.000	5456.28	111.72 S	54.67 E	117.65	34.297

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Sperry-Sun Drilling Services

Survey Report for R.U. 13-34

Mobil
San Juan County

Utah
Ratherford Unit

Measured Depth (ft)	Incl.	Azim.	Vertical Depth (ft)	Northings (ft)	Eastings (ft)	Vertical Section (ft)	Dogleg Rate (°/100ft)
5580.66	90.600	133.000	5456.05	121.81 S	65.30 E	132.31	7.954
5612.47	88.800	131.100	5456.22	143.11 S	88.92 E	164.07	8.228
5644.19	89.100	133.000	5456.80	164.35 S	112.47 E	195.74	6.063
5675.95	88.900	131.900	5457.35	185.78 S	135.90 E	227.46	3.520
5707.05	88.200	131.200	5458.14	206.41 S	159.17 E	258.50	3.183
5738.80	88.900	129.800	5458.94	227.02 S	183.30 E	290.14	4.929
5770.52	89.300	129.500	5459.44	247.26 S	207.72 E	321.72	1.576
5802.28	90.000	128.900	5459.64	267.33 S	232.33 E	353.31	2.903
5834.06	90.600	129.300	5459.47	287.37 S	256.99 E	384.92	2.269
5865.73	90.400	127.900	5459.19	307.13 S	281.74 E	416.39	4.465
5897.46	91.100	127.000	5458.78	326.42 S	306.93 E	447.85	3.593
5929.30	91.600	126.700	5458.03	345.51 S	332.40 E	479.36	1.831
5961.00	91.400	126.100	5457.20	364.31 S	357.91 E	510.69	1.994
5991.97	91.900	126.100	5456.31	382.55 S	382.92 E	541.27	1.614
6023.77	89.200	128.800	5456.00	401.89 S	408.16 E	572.79	12.007
6055.50	88.200	128.100	5456.72	421.61 S	433.00 E	604.30	3.847
6087.29	90.000	130.500	5457.22	441.74 S	457.60 E	635.93	9.436
6118.48	91.700	133.000	5456.76	462.51 S	480.86 E	667.06	9.692
6150.32	93.000	135.400	5455.45	484.68 S	503.67 E	698.87	8.567
6182.06	93.300	138.400	5453.71	507.82 S	525.32 E	730.54	9.485
6213.91	92.600	139.500	5452.07	531.81 S	546.21 E	762.27	4.090
6244.51	92.500	138.300	5450.71	554.84 S	566.30 E	792.77	3.931
6276.40	89.000	137.600	5450.29	578.52 S	587.66 E	824.61	11.192
6308.11	87.700	137.600	5451.20	601.92 S	609.03 E	856.27	4.100
6339.91	87.300	135.100	5452.59	624.91 S	630.96 E	888.03	7.954
6371.75	88.100	134.900	5453.87	647.41 S	653.45 E	919.85	2.590
6403.45	89.200	134.700	5454.61	669.74 S	675.94 E	951.54	3.527
6435.15	91.200	134.900	5454.50	692.07 S	698.43 E	983.23	6.341
6466.98	89.400	133.300	5454.34	714.22 S	721.29 E	1015.06	7.566
6498.68	90.400	133.000	5454.39	735.90 S	744.42 E	1046.74	3.293
6530.39	89.300	131.200	5454.48	757.16 S	767.94 E	1078.41	6.652
6562.12	89.700	130.500	5454.75	777.91 S	791.94 E	1110.05	2.541
6593.88	90.800	132.600	5454.61	798.98 S	815.71 E	1141.75	7.464
6625.76	90.900	132.500	5454.14	820.53 S	839.19 E	1173.60	0.444
6657.37	90.900	134.700	5453.64	842.33 S	862.08 E	1205.20	6.959
6689.21	91.000	133.000	5453.12	864.38 S	885.04 E	1237.02	5.348
6721.02	92.000	136.900	5452.28	886.84 S	907.54 E	1268.82	12.653
6752.84	91.700	137.200	5451.26	910.12 S	929.21 E	1300.60	1.333
6784.61	90.800	137.900	5450.56	933.56 S	950.64 E	1332.33	3.589
6816.37	91.600	138.400	5449.90	957.21 S	971.83 E	1364.03	2.970
6848.23	89.100	137.200	5449.70	980.81 S	993.23 E	1395.85	8.704
6880.05	84.600	134.900	5451.45	1003.67 S	1015.27 E	1427.61	15.876
6911.89	85.100	134.400	5454.31	1025.96 S	1037.83 E	1459.32	2.216
6943.72	89.200	134.400	5455.89	1048.20 S	1060.54 E	1491.10	12.881
6975.53	89.800	134.600	5456.17	1070.49 S	1083.23 E	1522.91	1.988

Continued...

Sperry-Sun Drilling Services

Survey Report for R.U. 13-34

Mobil
San Juan County

Utah
Ratherford Unit

Measured Depth (ft)	Incl.	Azim.	Vertical Depth (ft)	Northings (ft)	Eastings (ft)	Vertical Section (ft)	Dogleg Rate (°/100ft)
7007.26	90.800	134.700	5456.00	1092.79 S	1105.80 E	1554.64	3.167
7038.43	87.900	133.500	5456.36	1114.48 S	1128.18 E	1585.80	10.069
7069.39	90.700	133.300	5456.73	1135.75 S	1150.67 E	1616.74	9.067
7101.14	91.200	132.600	5456.21	1157.38 S	1173.90 E	1648.47	2.709
7132.97	89.000	132.500	5456.15	1178.90 S	1197.35 E	1680.26	6.919
7164.72	87.200	133.500	5457.21	1200.54 S	1220.56 E	1711.98	6.485
7195.68	88.200	133.000	5458.45	1221.74 S	1243.09 E	1742.90	3.611
7227.50	88.500	132.300	5459.36	1243.29 S	1266.48 E	1774.68	2.393
7259.20	90.500	131.900	5459.64	1264.54 S	1290.00 E	1806.33	6.434
7290.92	90.000	131.800	5459.50	1285.70 S	1313.63 E	1838.00	1.608
7313.00	88.400	132.300	5459.81	1300.49 S	1330.02 E	1860.05	7.592
7344.00	88.400	132.300	5460.68	1321.34 S	1352.94 E	1891.01	0.000

All data is in feet unless otherwise stated. Directions and coordinates are relative to True North.
Vertical depths are relative to Well. Northings and Eastings are relative to Well.

The Dogleg Severity is in Degrees per 100ft.
Vertical Section is from Well and calculated along an Azimuth of 135.000° (True).

Based upon Minimum Curvature type calculations, at a Measured Depth of 7344.00ft.,
The Bottom Hole Displacement is 1891.14ft., in the Direction of 134.323° (True).

sperry-sun

DRILLING SERVICES

A DRESSER INDUSTRIES, INC. COMPANY

Mobil
San Juan County
Utah
Ratherford Unit
R.U. 13-34 - MWD Survey Leg 2 ST1

SURVEY REPORT

15 December, 1997

Survey Ref: svy2160

Sperry-Sun Drilling Services

Survey Report for R.U. 13-34

Mobil
San Juan County

Utah
Ratherford Unit

Measured Depth (ft)	Incl.	Azim.	Vertical Depth (ft)	Northings (ft)	Eastings (ft)	Vertical Section (ft)	Dogleg Rate (°/100ft)
Gyro							
0.00	0.000	0.000	0.00	0.00 N	0.00 E	0.00	
100.00	0.920	101.910	100.00	0.17 S	0.79 E	0.67	0.920
200.00	0.940	96.600	199.98	0.43 S	2.39 E	1.99	0.088
300.00	0.920	104.400	299.97	0.72 S	3.98 E	3.32	0.128
400.00	0.640	98.680	399.96	1.00 S	5.31 E	4.46	0.290
500.00	0.630	73.680	499.95	0.93 S	6.39 E	5.18	0.275
600.00	0.350	41.220	599.95	0.55 S	7.12 E	5.42	0.384
700.00	0.660	315.970	699.95	0.09 N	6.92 E	4.82	0.721
800.00	0.830	312.500	799.94	1.00 N	5.98 E	3.53	0.176
900.00	1.650	301.030	899.91	2.23 N	4.22 E	1.40	0.853
1000.00	1.740	303.570	999.87	3.81 N	1.72 E	-1.48	0.117
1100.00	2.080	297.530	1099.82	5.49 N	1.16 W	-4.70	0.395
1200.00	2.330	291.540	1199.74	7.07 N	4.66 W	-8.30	0.340
1300.00	2.600	291.820	1299.65	8.66 N	8.65 W	-12.25	0.270
1400.00	2.600	297.230	1399.55	10.54 N	12.78 W	-16.49	0.245
1500.00	2.550	295.240	1499.45	12.53 N	16.81 W	-20.74	0.102
1600.00	2.230	300.240	1599.36	14.46 N	20.50 W	-24.72	0.382
1700.00	2.220	295.230	1699.28	16.27 N	23.93 W	-28.42	0.195
1800.00	1.850	296.090	1799.22	17.80 N	27.13 W	-31.77	0.371
1900.00	1.600	294.980	1899.17	19.10 N	29.85 W	-34.61	0.252
2000.00	1.360	292.650	1999.14	20.15 N	32.21 W	-37.02	0.247
2100.00	1.270	294.680	2099.11	21.07 N	34.31 W	-39.16	0.101
2200.00	0.960	295.930	2199.10	21.90 N	36.07 W	-40.99	0.311
2300.00	1.250	336.320	2299.08	23.26 N	37.26 W	-42.80	0.810
2400.00	1.840	2.650	2399.04	25.86 N	37.63 W	-44.89	0.908
2500.00	2.130	10.190	2498.98	29.30 N	37.22 W	-47.04	0.390
2600.00	2.440	9.680	2598.90	33.22 N	36.54 W	-49.33	0.311
2700.00	2.460	9.230	2698.81	37.44 N	35.83 W	-51.81	0.028
2800.00	2.120	15.130	2798.73	41.34 N	35.01 W	-53.99	0.413
2900.00	1.530	20.210	2898.68	44.38 N	34.06 W	-55.47	0.611
3000.00	1.120	40.110	2998.65	46.38 N	32.97 W	-56.11	0.610
3100.00	1.170	37.700	3098.63	47.94 N	31.72 W	-56.33	0.069
3200.00	1.230	60.610	3198.61	49.27 N	30.16 W	-56.17	0.480
3300.00	1.220	75.650	3298.59	50.06 N	28.19 W	-55.34	0.321
3400.00	1.310	83.830	3398.57	50.45 N	26.03 W	-54.08	0.202
3500.00	1.040	98.790	3498.55	50.43 N	23.99 W	-52.63	0.406
3600.00	0.720	100.040	3598.53	50.19 N	22.48 W	-51.38	0.321
3700.00	0.570	105.160	3698.53	49.95 N	21.38 W	-50.43	0.161
3800.00	0.450	145.920	3798.52	49.49 N	20.68 W	-49.62	0.373
3900.00	0.550	147.210	3898.52	48.76 N	20.20 W	-48.76	0.101

Continued...

Sperry-Sun Drilling Services

Survey Report for R.U. 13-34

Mobil
San Juan County

Utah
Ratherford Unit

Measured Depth (ft)	Incl.	Azim.	Vertical Depth (ft)	Northings (ft)	Eastings (ft)	Vertical Section (ft)	Dogleg Rate (°/100ft)
4000.00	0.430	131.630	3998.52	48.11 N	19.66 W	-47.92	0.178
4100.00	0.340	192.590	4098.51	47.57 N	19.44 W	-47.38	0.398
4200.00	0.370	195.780	4198.51	46.97 N	19.59 W	-47.07	0.036
4300.00	0.780	218.690	4298.51	46.13 N	20.11 W	-46.84	0.462
4400.00	0.510	208.840	4398.50	45.21 N	20.75 W	-46.64	0.291
4500.00	0.510	210.850	4498.50	44.44 N	21.19 W	-46.40	0.018
4600.00	0.680	226.440	4598.49	43.64 N	21.85 W	-46.31	0.233
4700.00	0.630	211.440	4698.48	42.77 N	22.56 W	-46.20	0.178
4800.00	0.620	225.990	4798.48	41.92 N	23.24 W	-46.08	0.159
4900.00	0.410	235.120	4898.47	41.34 N	23.92 W	-46.15	0.225
5000.00	0.420	189.300	4998.47	40.77 N	24.28 W	-46.00	0.323
5100.00	0.280	241.640	5098.47	40.30 N	24.55 W	-45.85	0.333
5200.00	0.280	180.790	5198.47	39.94 N	24.77 W	-45.75	0.284
5300.00	0.480	205.980	5298.47	39.32 N	24.96 W	-45.45	0.256
MWD Survey							
5311.00	0.490	207.310	5309.47	39.23 N	25.00 W	-45.42	0.137
5320.00	3.700	203.900	5318.46	38.93 N	25.13 W	-45.30	35.678
5330.00	6.900	160.400	5328.42	38.07 N	25.06 W	-44.64	49.225
5340.00	10.700	168.800	5338.30	36.59 N	24.68 W	-43.33	40.015
5350.00	15.400	162.500	5348.04	34.42 N	24.10 W	-41.38	49.038
5360.00	19.800	158.800	5357.57	31.57 N	23.09 W	-38.65	45.379
5370.00	24.000	158.800	5366.85	28.09 N	21.74 W	-35.24	42.000
5380.00	28.300	158.100	5375.82	23.99 N	20.12 W	-31.19	43.110
5390.00	32.400	158.600	5384.45	19.30 N	18.26 W	-26.56	41.077
5400.00	36.700	158.600	5392.68	14.02 N	16.19 W	-21.36	43.000
5410.00	40.500	159.300	5400.50	8.20 N	13.95 W	-15.66	38.250
5420.00	43.800	160.400	5407.91	1.90 N	11.64 W	-9.57	33.814
5430.00	47.800	161.400	5414.88	4.88 S	9.30 W	-3.13	40.636
5440.00	52.100	161.900	5421.31	12.14 S	6.89 W	3.71	43.170
5450.00	56.200	161.400	5427.17	19.83 S	4.34 W	10.96	41.200
5460.00	60.700	160.900	5432.40	27.89 S	1.58 W	18.60	45.201
5470.00	64.700	159.800	5436.98	36.26 S	1.41 E	26.63	41.176
5480.00	68.200	156.600	5440.98	44.77 S	4.81 E	35.06	45.663
5490.00	71.700	153.700	5444.41	53.29 S	8.76 E	43.88	44.349
5500.00	75.000	151.000	5447.27	61.77 S	13.21 E	53.02	41.927
5510.00	77.600	147.600	5449.64	70.12 S	18.17 E	62.43	42.035
5520.00	79.100	143.200	5451.66	78.18 S	23.73 E	72.06	45.628
5530.00	80.300	139.300	5453.45	85.85 S	29.89 E	81.84	40.203
5540.00	82.800	137.000	5454.92	93.22 S	36.49 E	91.72	33.801
5566.00	91.200	134.000	5456.28	111.72 S	54.67 E	117.65	34.297

Continued...

Mobil
San Juan County

Utah
Ratherford Unit

Measured Depth (ft)	Incl.	Azim.	Vertical Depth (ft)	Northings (ft)	Eastings (ft)	Vertical Section (ft)	Dogleg Rate (°/100ft)
5580.66	90.600	133.000	5456.05	121.81 S	65.30 E	132.31	7.954
5612.47	88.600	131.100	5456.22	143.11 S	88.92 E	164.07	8.228
5644.19	89.100	133.000	5456.80	164.35 S	112.47 E	195.74	6.063
5675.95	88.900	131.900	5457.35	185.78 S	135.90 E	227.46	3.520
5707.05	88.200	131.200	5458.14	206.41 S	159.17 E	258.50	3.183
5738.80	88.900	129.800	5458.94	227.02 S	183.30 E	290.14	4.929
5770.52	89.300	129.500	5459.44	247.26 S	207.72 E	321.72	1.576
5802.28	90.000	128.900	5459.64	267.33 S	232.33 E	353.31	2.903
5834.06	90.600	129.300	5459.47	287.37 S	256.99 E	384.92	2.269
5865.73	90.400	127.900	5459.19	307.13 S	281.74 E	416.39	4.465
5897.46	91.100	127.000	5458.78	326.42 S	306.93 E	447.85	3.593
5929.30	91.600	126.700	5458.03	345.51 S	332.40 E	479.36	1.831
5961.00	91.400	126.100	5457.20	364.31 S	357.91 E	510.69	1.994
5991.97	91.900	126.100	5456.31	382.55 S	382.92 E	541.27	1.614
6023.77	89.200	128.800	5456.00	401.89 S	408.16 E	572.79	12.007
6055.50	88.200	128.100	5456.72	421.61 S	433.00 E	604.30	3.847
6087.29	90.000	130.500	5457.22	441.74 S	457.60 E	635.93	9.436
6118.48	91.700	133.000	5456.76	462.51 S	480.86 E	667.06	9.692
6150.32	93.000	135.400	5455.45	484.68 S	503.67 E	698.87	8.567
6182.06	93.300	138.400	5453.71	507.82 S	525.32 E	730.54	9.485
6213.91	92.600	139.500	5452.07	531.81 S	546.21 E	762.27	4.090
6244.51	92.500	138.300	5450.71	554.84 S	566.30 E	792.77	3.931
6276.40	89.000	137.600	5450.29	578.52 S	587.66 E	824.61	11.192
6308.11	87.700	137.600	5451.20	601.92 S	609.03 E	856.27	4.100
6339.91	87.300	135.100	5452.59	624.91 S	630.96 E	888.03	7.954
6371.75	88.100	134.900	5453.87	647.41 S	653.45 E	919.85	2.590
6403.45	89.200	134.700	5454.61	669.74 S	675.94 E	951.54	3.527
6435.15	91.200	134.900	5454.50	692.07 S	698.43 E	983.23	6.341
6466.98	89.400	133.300	5454.34	714.22 S	721.29 E	1015.06	7.566
6498.68	90.400	133.000	5454.39	735.90 S	744.42 E	1046.74	3.293
6530.39	89.300	131.200	5454.48	757.16 S	767.94 E	1078.41	6.652
6562.12	89.700	130.500	5454.75	777.91 S	791.94 E	1110.05	2.541
6593.88	90.800	132.600	5454.61	798.98 S	815.71 E	1141.75	7.464
6625.76	90.900	132.500	5454.14	820.53 S	839.19 E	1173.60	0.444
6656.00	90.900	134.605	5453.67	841.36 S	861.10 E	1203.83	6.959

MWD Survey Leg 2 ST1

6657.37	90.900	134.700	5453.64	842.33 S	862.08 E	1205.20	6.959
6689.23	89.300	132.100	5453.59	864.21 S	885.22 E	1237.04	9.582
6721.03	90.600	129.800	5453.62	885.05 S	909.24 E	1268.76	8.308
6752.85	90.400	128.600	5453.34	905.16 S	933.90 E	1300.41	3.823
6784.60	90.500	127.700	5453.09	924.78 S	958.86 E	1331.93	2.852

Continued...

Sperry-Sun Drilling Services

Survey Report for R.U. 13-34

Mobil **Utah**
San Juan County **Ratherford Unit**

Measured Depth (ft)	Incl.	Azim.	Vertical Depth (ft)	Northings (ft)	Eastings (ft)	Vertical Section (ft)	Dogleg Rate (°/100ft)
6816.36	90.500	127.000	5452.81	944.04 S	984.11 E	1363.41	2.204
6848.20	90.900	127.400	5452.42	963.29 S	1009.47 E	1394.95	1.777
6880.00	93.300	127.900	5451.26	982.70 S	1034.63 E	1426.47	7.709
6911.84	93.700	128.100	5449.31	1002.27 S	1059.67 E	1458.01	1.404
6943.23	93.200	126.800	5447.42	1021.32 S	1084.55 E	1489.07	4.430
6975.02	92.700	127.500	5445.79	1040.49 S	1109.85 E	1520.52	2.704
7006.74	90.300	128.200	5444.96	1059.95 S	1134.89 E	1551.98	7.881
7037.89	90.900	128.600	5444.63	1079.30 S	1159.30 E	1582.92	2.315
7068.84	92.300	128.900	5443.77	1098.66 S	1183.43 E	1613.68	4.626
7100.57	93.300	129.800	5442.22	1118.75 S	1207.93 E	1645.22	4.238
7132.39	93.400	131.200	5440.36	1139.38 S	1232.09 E	1676.88	4.403
7164.13	91.600	131.600	5438.97	1160.35 S	1255.87 E	1708.53	5.809
7195.08	92.100	132.100	5437.98	1180.99 S	1278.91 E	1739.42	2.284
7226.89	91.800	134.000	5436.89	1202.69 S	1302.14 E	1771.19	6.044
7258.64	90.200	134.000	5436.34	1224.74 S	1324.98 E	1802.93	5.039
7290.36	89.100	135.400	5436.53	1247.05 S	1347.52 E	1834.64	5.613
7321.99	88.600	136.100	5437.17	1269.71 S	1369.59 E	1866.26	2.719
7353.77	88.100	136.900	5438.08	1292.75 S	1391.46 E	1898.02	2.968
7385.58	88.500	137.000	5439.03	1315.98 S	1413.16 E	1929.80	1.296
7417.31	88.700	136.900	5439.80	1339.16 S	1434.82 E	1961.50	0.705
7449.18	87.400	137.200	5440.89	1362.48 S	1456.52 E	1993.33	4.186
7480.93	86.900	137.600	5442.46	1385.82 S	1477.98 E	2025.01	2.016
7516.00	86.900	137.600	5444.36	1411.68 S	1501.60 E	2060.00	0.000

All data is in feet unless otherwise stated. Directions and coordinates are relative to True North.
Vertical depths are relative to Well. Northings and Eastings are relative to Well.

The Dogleg Severity is in Degrees per 100ft.
Vertical Section is from Well and calculated along an Azimuth of 135.000° (True).

Based upon Minimum Curvature type calculations, at a Measured Depth of 7516.00ft.,
The Bottom Hole Displacement is 2060.98ft., in the Direction of 133.232° (True).

sperry-sun

DRILLING SERVICES

A DRESSER INDUSTRIES, INC. COMPANY

Mobil
San Juan County
Utah
Ratherford Unit
R.U. 13-34 - MWD Survey Leg 3

SURVEY REPORT

15 December, 1997

Survey Ref: svy2216

Sperry-Sun Drilling Services

Survey Report for R.U. 13-34

Mobil
San Juan County

Utah
Ratherford Unit

Measured Depth (ft)	Incl.	Azim.	Vertical Depth (ft)	Northings (ft)	Eastings (ft)	Vertical Section (ft)	Dogleg Rate (°/100ft)
Gyro							
0.00	0.000	0.000	0.00	0.00 N	0.00 E	0.00	
100.00	0.920	101.910	100.00	0.17 S	0.79 E	0.74	0.920
200.00	0.940	96.600	199.98	0.43 S	2.39 E	2.20	0.088
300.00	0.920	104.400	299.97	0.72 S	3.98 E	3.67	0.128
400.00	0.640	98.680	399.96	1.00 S	5.31 E	4.92	0.290
500.00	0.630	73.680	499.95	0.93 S	6.39 E	5.77	0.275
600.00	0.350	41.220	599.95	0.55 S	7.12 E	6.14	0.384
700.00	0.660	315.970	699.95	0.09 N	6.92 E	5.61	0.721
800.00	0.830	312.500	799.94	1.00 N	5.98 E	4.33	0.176
900.00	1.650	301.030	899.91	2.23 N	4.22 E	2.17	0.853
1000.00	1.740	303.570	999.87	3.81 N	1.72 E	-0.78	0.117
1100.00	2.080	297.530	1099.82	5.49 N	1.16 W	-4.10	0.395
1200.00	2.330	291.540	1199.74	7.07 N	4.66 W	-7.87	0.340
1300.00	2.600	291.820	1299.65	8.66 N	8.65 W	-12.06	0.270
1400.00	2.600	297.230	1399.55	10.54 N	12.78 W	-16.51	0.245
1500.00	2.550	295.240	1499.45	12.53 N	16.81 W	-20.95	0.102
1600.00	2.230	300.240	1599.36	14.46 N	20.50 W	-25.08	0.382
1700.00	2.220	295.230	1699.28	16.27 N	23.93 W	-28.93	0.195
1800.00	1.850	296.090	1799.22	17.80 N	27.13 W	-32.44	0.371
1900.00	1.600	294.980	1899.17	19.10 N	29.85 W	-35.41	0.252
2000.00	1.360	292.650	1999.14	20.15 N	32.21 W	-37.94	0.247
2100.00	1.270	294.680	2099.11	21.07 N	34.31 W	-40.19	0.101
2200.00	0.960	295.930	2199.10	21.90 N	36.07 W	-42.11	0.311
2300.00	1.250	336.320	2299.08	23.26 N	37.26 W	-43.87	0.810
2400.00	1.840	2.650	2399.04	25.86 N	37.63 W	-45.66	0.908
2500.00	2.130	10.190	2498.98	29.30 N	37.22 W	-47.30	0.390
2600.00	2.440	9.680	2598.90	33.22 N	36.54 W	-48.99	0.311
2700.00	2.460	9.230	2698.81	37.44 N	35.83 W	-50.83	0.028
2800.00	2.120	15.130	2798.73	41.34 N	35.01 W	-52.39	0.413
2900.00	1.530	20.210	2898.68	44.38 N	34.06 W	-53.36	0.611
3000.00	1.120	40.110	2998.65	46.38 N	32.97 W	-53.61	0.610
3100.00	1.170	37.700	3098.63	47.94 N	31.72 W	-53.48	0.069
3200.00	1.230	60.610	3198.61	49.27 N	30.16 W	-52.97	0.480
3300.00	1.220	75.650	3298.59	50.06 N	28.19 W	-51.81	0.321
3400.00	1.310	83.830	3398.57	50.45 N	26.03 W	-50.26	0.202
3500.00	1.040	98.790	3498.55	50.43 N	23.99 W	-48.58	0.406
3600.00	0.720	100.040	3598.53	50.19 N	22.48 W	-47.20	0.321
3700.00	0.570	105.160	3698.53	49.95 N	21.38 W	-46.16	0.161
3800.00	0.450	145.920	3798.52	49.49 N	20.68 W	-45.32	0.373
3900.00	0.550	147.210	3898.52	48.76 N	20.20 W	-44.51	0.101

Continued...

Mobil
San Juan County

Utah
Ratherford Unit

Measured Depth (ft)	Incl.	Azim.	Vertical Depth (ft)	Northings (ft)	Eastings (ft)	Vertical Section (ft)	Dogleg Rate (°/100ft)
5845.75	90.400	125.300	5419.38	188.54 S	394.98 E	431.69	0.996
5877.47	90.900	126.000	5419.02	207.03 S	420.76 E	463.41	2.712
5909.27	91.600	126.000	5418.33	225.71 S	446.48 E	495.20	2.201
5941.15	91.200	126.000	5417.55	244.45 S	472.26 E	527.06	1.255
5972.13	90.400	126.300	5417.12	262.72 S	497.27 E	558.03	2.758
6003.12	91.600	126.500	5416.58	281.11 S	522.21 E	589.01	3.926
6034.88	91.500	125.400	5415.72	299.74 S	547.92 E	620.75	3.477
6066.63	89.400	125.300	5415.47	318.11 S	573.81 E	652.50	6.622
6098.29	89.400	126.000	5415.80	336.56 S	599.53 E	684.15	2.211
6129.94	89.500	126.500	5416.10	355.28 S	625.06 E	715.80	1.611
6161.77	88.700	126.300	5416.60	374.16 S	650.67 E	747.61	2.591
6193.59	88.800	126.700	5417.30	393.09 S	676.25 E	779.41	1.295
6225.42	88.800	126.800	5417.96	412.13 S	701.74 E	811.22	0.314
6257.25	89.200	127.200	5418.52	431.28 S	727.16 E	843.03	1.777
6289.05	89.100	127.400	5418.99	450.55 S	752.45 E	874.80	0.703
6320.90	89.600	127.500	5419.35	469.91 S	777.74 E	906.62	1.601
6352.64	89.500	127.700	5419.60	489.28 S	802.88 E	938.32	0.704
6384.49	90.000	128.100	5419.74	508.84 S	828.02 E	970.13	2.010
6416.31	90.400	128.100	5419.63	528.48 S	853.06 E	1001.91	1.257
6448.11	90.400	127.700	5419.41	548.01 S	878.15 E	1033.66	1.258
6479.95	89.800	127.400	5419.35	567.42 S	903.39 E	1065.47	2.107
6511.83	89.800	127.200	5419.46	586.73 S	928.75 E	1097.33	0.627
6543.58	89.700	127.400	5419.60	605.97 S	954.01 E	1129.05	0.704
6575.30	90.200	126.500	5419.63	625.04 S	979.36 E	1160.75	3.246
6606.94	89.900	125.400	5419.60	643.62 S	1004.97 E	1192.39	3.604
6638.00	89.100	124.700	5419.87	661.45 S	1030.40 E	1223.44	3.422
6669.73	89.200	124.500	5420.34	679.47 S	1056.51 E	1255.17	0.705
6701.47	88.300	125.300	5421.04	697.62 S	1082.54 E	1286.90	3.793
6733.17	88.800	124.700	5421.84	715.80 S	1108.49 E	1318.59	2.463
6764.90	88.700	124.200	5422.53	733.75 S	1134.65 E	1350.31	1.607
6796.73	87.900	124.400	5423.47	751.67 S	1160.94 E	1382.13	2.591
6828.43	89.600	125.300	5424.17	769.78 S	1186.94 E	1413.82	6.068
6860.24	91.800	127.400	5423.78	788.63 S	1212.56 E	1445.61	9.560
6891.19	92.200	127.500	5422.70	807.44 S	1237.11 E	1476.51	1.332
6922.03	92.300	127.200	5421.49	826.14 S	1261.61 E	1507.30	1.025
6953.87	92.500	127.000	5420.15	845.33 S	1286.98 E	1539.10	0.888
6984.93	92.600	127.000	5418.77	864.00 S	1311.77 E	1570.11	0.322
7016.78	91.000	127.400	5417.77	883.25 S	1337.12 E	1601.92	5.178
7048.54	90.400	126.700	5417.38	902.38 S	1362.47 E	1633.65	2.903
7080.24	90.800	127.700	5417.05	921.55 S	1387.72 E	1665.33	3.397
7112.03	89.500	128.100	5416.97	941.07 S	1412.80 E	1697.08	4.279
7142.91	89.200	128.100	5417.32	960.13 S	1437.10 E	1727.91	0.971
7174.67	88.600	127.500	5417.93	979.59 S	1462.19 E	1759.62	2.671
7206.49	88.000	127.500	5418.87	998.95 S	1487.42 E	1791.40	1.886
7238.16	88.500	126.700	5419.84	1018.05 S	1512.67 E	1823.03	2.978

Continued...

Sperry-Sun Drilling Services

Survey Report for R.U. 13-34

Mobil
San Juan County

Utah
Ratherford Unit

Measured Depth (ft)	Incl.	Azim.	Vertical Depth (ft)	Northings (ft)	Eastings (ft)	Vertical Section (ft)	Dogleg Rate (°/100ft)
7269.91	88.900	126.000	5420.56	1036.86 S	1538.23 E	1854.77	2.539
7301.70	89.300	126.100	5421.06	1055.57 S	1563.93 E	1886.55	1.297
7333.39	90.100	126.300	5421.22	1074.28 S	1589.51 E	1918.23	2.602
7365.26	91.600	126.300	5420.75	1093.15 S	1615.19 E	1950.09	4.707
7396.99	91.800	126.100	5419.81	1111.88 S	1640.78 E	1981.80	0.891
7428.81	89.900	125.600	5419.34	1130.51 S	1666.57 E	2013.61	6.174
7460.67	89.600	125.400	5419.48	1149.01 S	1692.51 E	2045.47	1.132
7491.85	89.600	125.100	5419.69	1167.01 S	1717.97 E	2076.64	0.962
7523.73	90.400	125.800	5419.69	1185.50 S	1743.94 E	2108.52	3.334
7555.46	90.200	126.300	5419.53	1204.17 S	1769.59 E	2140.25	1.697
7587.27	89.700	126.500	5419.56	1223.05 S	1795.19 E	2172.05	1.693
7617.88	89.300	126.100	5419.82	1241.17 S	1819.86 E	2202.65	1.848
7649.69	88.400	125.600	5420.46	1259.79 S	1845.64 E	2234.45	3.236
7681.35	88.200	126.500	5421.40	1278.42 S	1871.23 E	2266.09	2.911
7713.15	89.000	127.000	5422.18	1297.44 S	1896.70 E	2297.86	2.966
7744.86	89.700	126.700	5422.54	1316.45 S	1922.07 E	2329.55	2.402
7776.60	90.100	127.000	5422.59	1335.49 S	1947.47 E	2361.28	1.575
7808.49	90.900	127.000	5422.31	1354.68 S	1972.94 E	2393.15	2.509
7840.11	91.200	127.200	5421.74	1373.75 S	1998.15 E	2424.74	1.140
7871.93	91.700	127.700	5420.93	1393.09 S	2023.41 E	2456.52	2.222
7902.89	92.100	127.400	5419.90	1411.95 S	2047.94 E	2487.43	1.615
7934.74	92.200	127.000	5418.71	1431.19 S	2073.29 E	2519.24	1.294
7966.52	92.000	126.800	5417.54	1450.26 S	2098.69 E	2550.98	0.890
7997.70	92.100	127.000	5416.43	1468.97 S	2123.61 E	2582.12	0.717
8029.47	91.800	127.000	5415.35	1488.08 S	2148.96 E	2613.85	0.944
8061.32	91.200	127.000	5414.51	1507.24 S	2174.39 E	2645.67	1.884
8093.18	91.100	127.400	5413.87	1526.50 S	2199.76 E	2677.50	1.294
8124.95	89.500	126.500	5413.71	1545.59 S	2225.15 E	2709.25	5.778
8156.82	87.500	125.400	5414.54	1564.30 S	2250.94 E	2741.11	7.161
8188.62	89.000	125.600	5415.51	1582.75 S	2276.82 E	2772.89	4.759
8220.45	90.100	125.600	5415.76	1601.28 S	2302.70 E	2804.72	3.456
8252.23	90.900	125.400	5415.49	1619.74 S	2328.57 E	2836.49	2.595
8283.95	88.200	124.000	5415.74	1637.79 S	2354.64 E	2868.21	9.588
8315.69	88.300	124.400	5416.70	1655.62 S	2380.88 E	2899.93	1.298
8347.50	88.800	124.200	5417.51	1673.54 S	2407.15 E	2931.73	1.693
8383.00	89.300	124.400	5418.10	1693.55 S	2436.47 E	2967.22	1.517
8416.00	89.300	124.400	5418.50	1712.19 S	2463.70 E	3000.22	0.000

All data is in feet unless otherwise stated. Directions and coordinates are relative to True North.
Vertical depths are relative to Well. Northings and Eastings are relative to Well.

The Dogleg Severity is in Degrees per 100ft.
Vertical Section is from Well and calculated along an Azimuth of 125.000° (True).

Based upon Minimum Curvature type calculations, at a Measured Depth of 8416.00ft.,
The Bottom Hole Displacement is 3000.23ft., in the Direction of 124.798° (True).

01/02/98
JRB

DRILLED FOOTAGE CALCULATION FOR DIRECTIONAL AND HORIZONTAL WELLS

Well Name: **Ratherford 13-34**
Surface Location: **660 ' FSL, 1980' FEL, Sec. 13, T.**

First leg description:	Leg #2
KOP MD:	5311.00
KOP TVD:	5309.47
EOL MD:	7344.00
EOL TVD:	5460.68
Footage drilled:	2033.00
Second leg description:	Leg #2 ST1
KOP MD:	6657.37
KOP TVD:	5453.64
EOL MD:	7516.00
EOL TVD:	5444.36
Footage drilled:	858.63
Third leg description:	Leg #3
KOP MD:	5294.00
KOP TVD:	5292.47
EOL MD:	8416.00
EOL TVD:	5418.50
Footage drilled:	3122.00
Fourth leg description:	
KOP MD:	
KOP TVD:	
EOL MD:	
EOL TVD:	
Footage drilled:	
Fifth leg description:	
KOP MD:	
KOP TVD:	
EOL MD:	
EOL TVD:	
Footage drilled:	

Total Footage Drilled (MD):	***6013.63***
Deepest point (TVD):	***5460.68***

STATE OF UTAH
DIVISION OF OIL, GAS AND MINING

ENTITY ACTION FORM - FORM 6

OPERATOR MOBIL PRODUCING TX & NM, INC.

ADDRESS P. O. BOX 633
MIDLAND, TX 79702

OPERATOR ACCT. NO. N 7370

ACTION CODE	CURRENT ENTITY NO.	NEW ENTITY NO.	API NUMBER	WELL NAME	WELL LOCATION QQ	SC	TP	RG	COUNTY	SPUD DATE	EFFECTIVE DATE
E	6280	→ 7	43-037-31130	RATHERFORD 13-34	SW/SE	13	41S	23E	SAN JUAN	9-6-97	10-30-97
WELL 1 COMMENTS: Sidetrack, entity previously added. Lec											
WELL 2 COMMENTS:											
WELL 3 COMMENTS:											
WELL 4 COMMENTS:											
WELL 5 COMMENTS:											

ACTION CODES (See instructions on back of form)
- A - Establish new entity for new well (single well only)
- B - Add new well to existing entity (group or unit well)
- C - Re-assign well from one existing entity to another existing entity
- D - Re-assign well from one existing entity to a new entity
- E - Other (explain in comments section)

NOTE: Use COMMENT section to explain why each Action Code was selected.

(3/89)

Lee Moseley for
Signature SHIRLEY HOUCHINS
ENV & REG TECH
Title
12-18-97
Date
Phone No. (915) 688-2585

Form 3160-5
(June 1990)

UNITED STATES
DEPARTMENT OF THE INTERIOR
BUREAU OF LAND MANAGEMENT

FORM APPROVED
Budget Bureau No. 1004-0135
Expires: March 31, 1993

SUNDRY NOTICES AND REPORTS ON WELLS

Do not use this form for proposals to drill or to deepen or reentry to a different reservoir.
Use "APPLICATION FOR PERMIT - " for such proposals

SUBMIT IN TRIPLICATE

5. Lease Designation and Serial No.: 14-20-603-247A
6. If Indian, Allottee or Tribe Name: NAVAJO TRIBAL
7. If Unit or CA, Agreement Designation: RATHERFORD UNIT
8. Well Name and No.: RATHERFORD 13-34
9. API Well No.: 43-037-31130
10. Field and Pool, or exploratory Area: GREATER ANETH
11. County or Parish, State: SAN JUAN UT

1. Type of Well: [X] Oil Well [ ] Gas Well [ ] Other
2. Name of Operator: MOBIL PRODUCING TX & NM INC.*
*MOBIL EXPLORATION & PRODUCING US INC. AS AGENT FOR MPTM
3. Address and Telephone No.: P.O. Box 633, Midland TX 79702 (915) 688-2585
4. Location of Well (Footage, Sec., T., R., M., or Survey Description)
SEC. 13, T41S, R23E
660' FSL, 1980' FEL (SW SE)
BHL: 901' N, 801' W F/SURFACE LOCATION (LAT #1)

12. CHECK APPROPRIATE BOX(s) TO INDICATE NATURE OF NOTICE, REPORT, OR OTHER DATA

TYPE OF SUBMISSION	TYPE OF ACTION	
[ ] Notice of Intent	[ ] Abandonment	[ ] Change of Plans
[X] Subsequent Report	[ ] Recompletion	[ ] New Construction
[ ] Final Abandonment Notice	[ ] Plugging Back	[ ] Non-Routine Fracturing
	[ ] Casing Repair	[ ] Water Shut-Off
	[ ] Altering Casing	[ ] Conversion to Injection
	[X] Other SIDETRACK	[ ] Dispose Water

(Note: Report results of multiple completion on Well Completion or Recompletion Report and Log form.)

13. Describe Proposed or Completed Operations (Clearly state all pertinent details, and give pertinent dates, including estimated date of starting any proposed work. If well is directionally drilled, give subsurface locations and measured and true vertical depths for all markers and zones pertinent to this work.)*

BHL: LATERAL #2A1(2) 1321' SOUTH & 1353' EAST F/SURFACE SPOT.
LATERAL #2B1(ST1) 1412' SOUTH & 1502' EAST F/SURFACE SPOT.
LATERAL #3A1(3) 1712' SOUTH & 2464' EAST F/SURFACE SPOT.

14. I hereby certify that the foregoing is true and correct
Signed Lee Moseley for Title SHIRLEY HOUCHINS/ENV & REG TECH Date 12-18-97

(This space for Federal or State office use)

Approved by _____ Title _____ Date _____
Conditions of approval, if any:

Title 18 U.S.C. Section 1001, makes it a crime for any person knowingly and willfully to make to any department or agency of the United States any false, fictitious or fraudulent statements or representations as to any matter within its jurisdiction.

*** See Instruction on Reverse Side**

ATTACHMENT - FORM 3160-5
RATHERFORD UNIT #13-34
14-20-603-247A
NAVAJO TRIBAL
SAN JUAN, UTAH

09-06-97	MIRU NAVAJO WEST RIG #36, CALLED BLM 9-4-97 TALKED TO JIM MORRIS, INFORMED OF IMPENDING INTENT TO PREP WELL FOR DRILLING, CALLED NAVAJO EPA @ 10:55, MESSAGE TO ANSWERING MACHINE OF IMPENDING PREP WELL FOR DRILLING. RIG UP PUMP & PITS. NIPPLE DOWN PRODUCTION WELL HEAD, NIPPLE UP BOPE. POH W/PRODUCTION TBG. RIH W/BRIDGE PLUG SET @ 5307'. DISPLACE HOLE W/10# BRINE, TEST OK.
09-08-97	SITP @ 7:30 WAS 0 PSI. SICP @ 7:30 WAS 0 PSI. POH & LAY DOWN 2 7/8" PROD. STRING. NIPPLE UP NEW TBG HANGER. TEST TO 1000 PSI. OK, CAP WELL, SHUT IN, RDMO NAVAJO WEST RIG #36
09-15-97	START MOVING IN & RIGGING UP NAVAJO RIG #25 , RIGGED UP 50%.
09--16-97	FINISH MIRU NAVAJO RIG #25. NU BOP STACK & CHOKE MANIFOLD. PRESSURE TEST TO 250 PSI LOW & 2500 PSI HIGH. PU RETRIEVING HD. & 2 7/8 APHDP TO 5300' & LATCH RBP. RU WEATHERFORD WL /PREP TO SET TIW PKR.
09-17-97	RIH W/TIW BIG BORE WL/SET PKR TOP @ 5338'. RDWL. TIH W/ANCHOR SEAL ASSY., ORIENT SUB, ETC. RIH W/GYRO & TOOK READINGS. GTF @ 13 DEGREES. RD GYRO, SHEAR PINS ON LATCH ASSY. POOH LAYING DOWN SAME.
09-17-97	RIH W/TIW LATCH ASSY. DEBRIS SUB, SHEAR TOOL, W EATHERFORD 3 DEGREE WHIPSTOCK, STARTER MILL, AOHDP, DC'S & AOHDP. LATCH INTO TIW PKR @ 5338' (TOP) , SHEAR OFF STARTER MILL & MILL F/5321-5323', CIRC HOLE CLEAN, HAND SWIVEL BACK, START OUT OF HOLE.
09-18-97	FINISH OUT OF HOLE W/STARTER MILL & LAY DOWN SAME. PU CSG. & WATERMELON MILL, SERVICE RIG, TIH & MILL WINDOW IN 7" CSG F/5321-5329'.
09-19-97	FINISH MILLING WINDOW ON CSG & FORMATION. WINDOW F/5321-5329' + 1' FORMATION TO 5330'. CIRC HOLE CLEAN. POOH LAYING DOWN MILLS.
09-19-97	LATERAL #2A1, PU CURVE BUILDING ASSY, PU SWIVEL & BREAK CIRC. RU GYRO & RIH, TIME DRILL F/5330-5334, SLIDE /DRILL F/5334-5368'. RD GYRO, SLIDE DRILL LATERAL CURVE SECTION F/5368-5383'.
09-20-97	SLIDE DRILL & SURVEY F/5368-5566' TD. LANDED CURVE @ 5566' TMD 5456.6 PROJECTED TVD. 1-C POROSITY TOP @ 5537 MD, 5454' TVD, CIRC SWEEP, CONTINUE SLIDE/ROTATE DRILL & SURVEYS F/5566-5670'.
09-21-97	SLIDE/ROTATE DRILL & SURVEY F/5670-6232'.
09-22-97	SLIDE/ROTATE DRILL & SURVEY F/6232-6955'.
09-23-97	SLIDE/ROTATE DRILL & SURVEY F/6955-7344' POOH F/BIT CHANGE, TIH TO 6657' TO SIDETRACT LATERAL 2A1.
09-24-97	PU POWER SWIVEL, CIRC & TROUGH F/6631-6656' FOR SIDETRACK LATERAL 2B1 F/6656-6964'. MWD FAILURE/PUMP SWEEP TO POOH.
09-25-97	PUMP SWEEP, POOH W/BHA FOR MWD FAILURE. CHANGE OUT MWD & MOTOR. RIH W/SAME BIT. 1.5" ADJ MOTOR ND REPLACED MWD TO BTM. CIRC. BTMS. UP. SLIDE/ROTATE DRILL & SURVEY F/6964-7195'.
09-26-97	SLIDE/ROTATE DRILL & SURVEY F/7195-7416'.
09-27-97	DRILLED F/7416-7516' TD LATERAL #2B1, POOH W/WHIPSTOCK. FINAL REPORT FOR LATERAL 2B1.
09-28-97	FINISH POH & LD WHIPSTOCK FOR LATERAL 2B1., RIH W/TIW ANCHOR LATCH ASSY, RIH & SET WHIPSTOCK @ 5394' (TOP), CUT WINDOW FOR LATERAL #3 F/5294-5302'

ATTACHMENT - FORM 3160-5
RATHERFORD UNIT #13-34
14-20-603-247A
NAVAJO TRIBAL
SAN JUAN, UTAH
PAGE 2

09-29-97	CIRC CLEAN, POOH W/MILLS
09-29-97	RIH W/CURVE DRILLING ASSY, DRILLED CURVE F/5303-5384'.
09-30-97	RIH W/LATERAL ASSY, DRILLED LATERAL 3A1 F/5502-5562'.
10-01-97	SLIDE & ROTATE DRILL LATERAL 3A1 F/5562-6924'.
10-02-97	SLIDE & ROTATE DRILL LATERAL 3A1 F/6924-7730'.
10-03-97	SLIDE & ROTATE DRILL LATERAL 3A1 F/7730-8416', WELL TD @ 8416 TMD, 5416-5425 TVD, PUMP SWEEP & CIRC HOLE CLEAN, WELL FLOWING 4 BBLS/HR.
10-04-97	PULLED BIT TO 5300, SPOTTED 100 BBLS 10# BRINE & KILLED WELL. FIN POOH & LD DC'S & PH6.DL MWD & MUD MOTOR, RIH W/7" ARROW RBP & 2 7/8 AOHDP, SET RBP @ 4267', PRESS TESTED CSG & RBP TO 750# HELD OK. POH & LD DP & SETTING TOOL. ND BOP, CHOKE, MUC GAS SEPERATOR, CAPPED WELL W/VALVE & FLANGE, JETTED & CLEANED PITS.
10-05-97	RIGGED DOWN ROTARY TOOLS, MOVE RIG.

COMPLETION

10-09-97	MIRU EQUIPMENT
10-10-97	FTIH LATCH ON RBP, RELEASE, CIRC HOLE, SET PKR ON 2 7/8" TBG @ 5493' TEST PKR TO 500# GOOD SISD, WO/ACID.
10-15-97	RU DOWELL C/T UT., TIH W C/T TO 8428' C/T, ACIDIZE W/1453 BBLS 15% HCL, RIG DOWN C/T, RU CHOKE & FLOW BEAM OPEN W 1100# DOWN TO 600#.
10-16-97	UNSAFE TO GUAGE TANKS, SIFN.
10-17-97	SICP @ 400#, SITP @ 35#, OPEN & FLOW TO TANK. BOT OF T/P IS @ 5495.06, WO ACID JOB. SIFN.
10-21-97	SITP @ 5:00 WAS 94 PSI, MIRU DOWELL COILED TBG. UT & PUMP TRUCKS, ACIDIZE LATERAL #2 F/7210-5580' W/34,272 GALS OF 15% HCL ACID. POOH W/C/T. RDMO DOWELL COILED TBG. UT. SIFN.
10-22-97	SITP @ 9:00 WAS 750 PSI. RIG UP, KILL WELL, RELEASE PKR, POH & LAY DOWN PKR & PH-6 TAIL PIPE, RIH W/RETV HEAD FOR WHIPSTOCK TO 5315.5, LATCH ONTO & RELEASE, POH, LAY DOWN TBG.
10-23-97	SIP @ 7:30 WAS 100 PSI, RU & KILL WELL, POH & LAY DOWN WORKSTRING, DID NOT RECV. RETV WHIPSTOCK, PICK-UP & RIH W 2 7/8" PROD. TBG WITH RETV. TOOLS FOR WHIPSTOCK. POH, SIFN.
10-24-97	SIP @ 7:30 WAS 0 PSI, RIH W/OVERSHOT, BUMPER SUB ON 2 7/8" TBG TO 5315', LATCH ONTO RETV WHIPSTOCK, RELEASE & POH, RIH W/ELECTRIC ESP PUMP ON 2 7/8" TBG TO 5247'. RIG DOWN BOPE, RU WELLHEAD FOR ELECTRIC CABLE. SIFN.
10-25-97	SIP @ 7:30 WAS 0 PSI, RU FLOW LINES TO WELL HEAD, START ESP DOWN HOLE PUMP, PUMP PRESSURE TO 750 PSI, OK., RIG DOWN NAVAJO WEST RIG #36.

ATTACHMENT - FORM 3160-5
RATHERFORD UNIT #13-34
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NAVAJO TRIBAL
SAN JUAN, UTAH
PAGE 3

10-26-97	SITP @ 7:30 WAS 0 PSI. SICP @ 7:30 WAS 250 PSI. RU & KILL WELL, RIG UP ESP SPOOL UT. POH W/ 2 7/8" TBG, SPOOL UP CABLE WHILE PULLING OUT OF HOLE, LAY DOWN PROTECTOR & MOTOR, POT HEAD BURN OUT @ MOTOR CONNECTION. SIFN.
10-28-97	SICP @ 7:30 WAS 350 PSI. RIG UP KILL WELL, PICK-UP & RIH W/ESP PROTECTOR, MOTOR, & PUMP TO 5247.40'. BAND CABLE TO TBG, WHILE RUNNING IN HOLE, NIPPLE DOWN BOPE. NIPPLE UP PUMP HEAD. ST ART ESP PUMP, PRESSURE TO 450 PSI.
10-29-97	DOWN HOLE PUMP IN POWER, TBG. PRESSURE @ 7:30 WAS 450 PSI. RIG NOWN MOVE OFF NAVAJO WEST RIG #36, FINAL COMPLETION REPORT, TURN WELL OVER TO PRODUCTION.

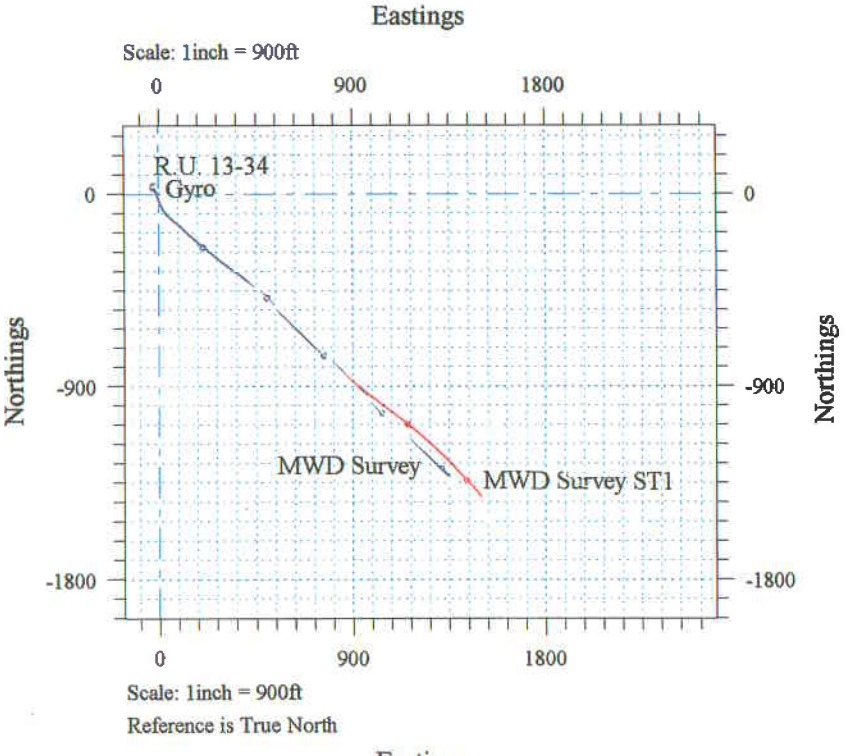
sperry-sun DRILLING SERVICES

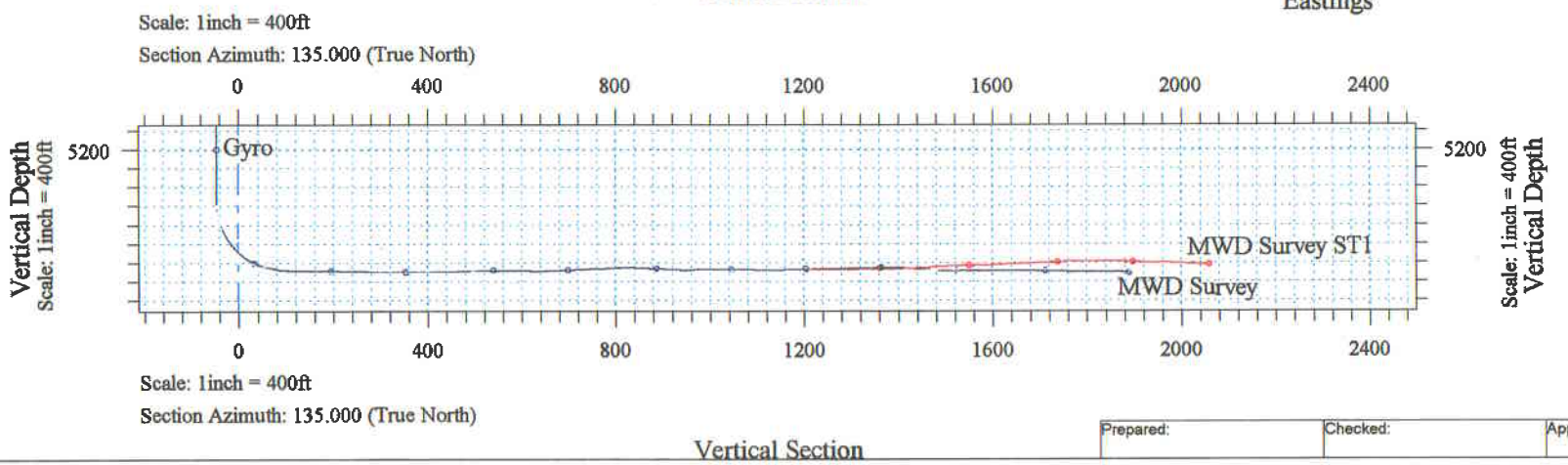
Well: R.U. 13-34

DrillQuest

Customer: Mobil
Folder: Mobil
Field: San Juan County
Project: Utah
Structure: Ratherford Unit
Well: R.U. 13-34

Mobil





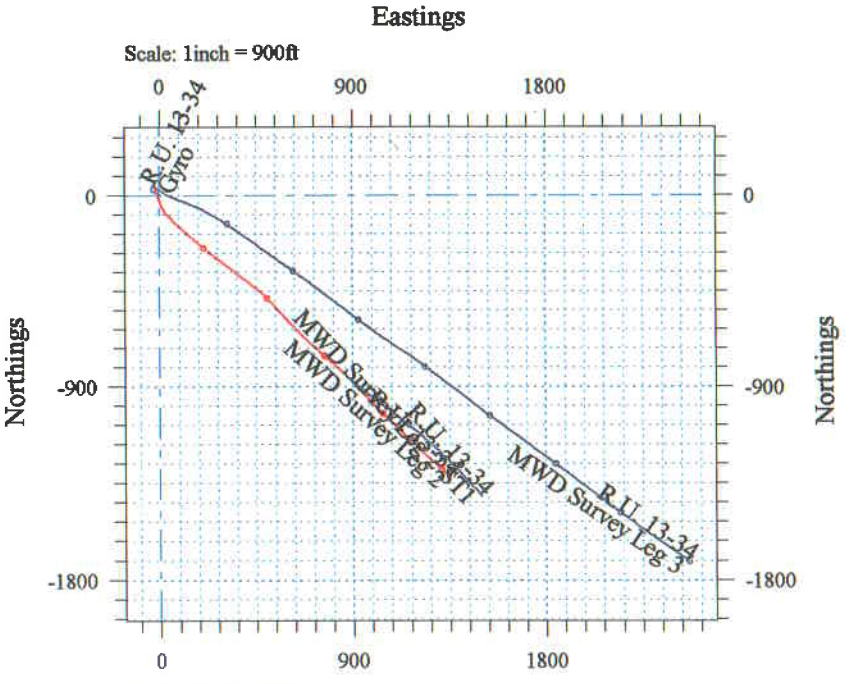
Prepared:	Checked:	Approved:

sperry-sun DRILLING SERVICES

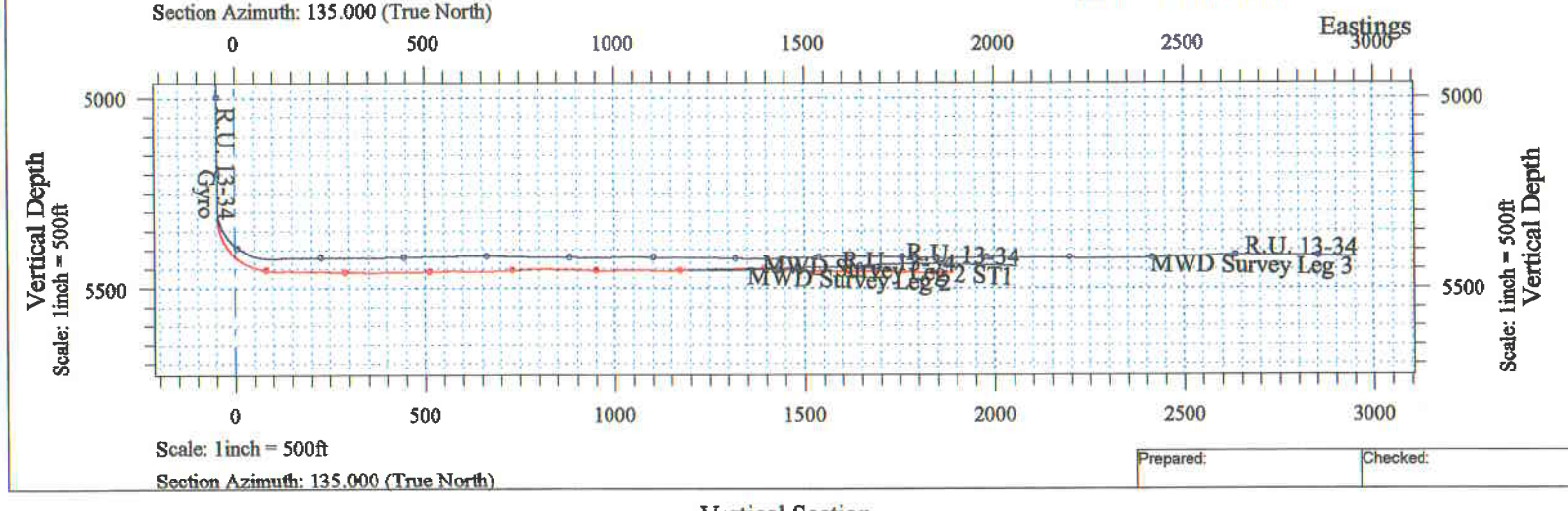
Profile: MWD Survey Leg 3

DrillQuest

Customer: Mobil
Folder: Mobil
Field: San Juan County
Project: Utah
Structure: Ratherford Unit
Well: R.U. 13-34



Vertical Section



Prepared:	Checked:	Approved:

Vertical Section

Form 3160-4
(July 1992)

UNITED STATES
DEPARTMENT OF THE INTERIOR
BUREAU OF LAND MANAGEMENT

SUBMIT IN DUPLICATE* (See other instructions on reverse side)

FORM APPROVED
OMB NO. 1004-0137
Expires: February 28, 1995

WELL COMPLETION OR RECOMPLETION REPORT AND LOG*

5. LEASE DESIGNATION AND SERIAL NO.: 14-20-603-247A

6. IF INDIAN, ALLOTTEE OR TRIBE NAME: NAVAJO TRIBAL

7. UNIT AGREEMENT NAME: RATHERFORD UNIT

8. FARM OR LEASE NAME, WELL NO.: RATHERFORD 13-34

1a. TYPE OF WELL: OIL WELL [X] GAS WELL [ ] DRY [ ] Other

b. TYPE OF COMPLETION: NEW WELL [ ] WORK OVER [ ] DEEP-EN [ ] PLUG BACK [ ] DIFF. RESVR. [ ] Other X SIDETRACK

2. NAME OF OPERATOR: MOBIL PRODUCING TX & NM INC.*
*MOBIL EXPLORATION & PRODUCING US INC. AS AGENT FOR MPTM

3. ADDRESS AND TELEPHONE NO.: P.O. Box 633, Midland TX 79702 (915) 688-2585

9. API WELL NO.: 43-037-31130

4. LOCATION OF WELL (Report location clearly and in accordance with any State requirements)*
At surface: 660' FSL & 1980' FEL (SW/SE)
At top prod. interval reported below: * #37
At total depth: * #37

RECEIVED
DEC 26 1997
DIV. OF OIL, GAS & MINING

10. FIELD AND POOL, OR WILDCAT: GREATER ANETH

11. SEC., T., R., M., OR BLK. AND SURVEY OR AREA: SEC. 13, T41S, R23E

14. PERMIT NO. | DATE ISSUED | 12. COUNTY OR PARISH: SAN JUAN | 13. STATE: UT

15. DATE SPUDDED	16. DATE T.D. REACHED	17. DATE COMPL. (Ready to prod.)	18. ELEVATIONS (DF, RKB, RT, GR, ETC.)*	19. ELEV. CASINGHEAD
9-06-97	10-05-97	10-30-97	4688.3 GR, 4701.3 RKB	

20. TOTAL DEPTH, MD & TVD	21. PLUG, BACK T.D., MD & TVD	22. IF MULTIPLE COMPL., HOW MANY*	23. INTERVALS DRILLED BY	ROTARY TOOLS	CABLE TOOLS
* #37	* #37		→	X	

24. PRODUCING INTERVAL(S), OF THIS COMPLETION - TOP, BOTTOM, NAME (MD AND TVD)*
** #37 DSCR

25. WAS DIRECTIONAL SURVEY MADE: YES

26. TYPE ELECTRIC AND OTHER LOGS RUN: NO MUDLOG LEGS 2&3 10-16-97

27. WAS WELL CORED: NO

28. CASING RECORD (Report all strings set in well)

CASING SIZE/GRADE	WEIGHT, LB./FT.	DEPTH SET (MD)	HOLE SIZE	TOP OF CEMENT, CEMENTING RECORD	AMOUNT PULLED
13 3/8"	54.5#	121'	17 1/2"	177 CU. FT. "B"	
9 5/8"	36#	1546'	12 1/4"	1808 CU. FT. "B"	
7"	23# & 26#	5517'	8 3/4"	1482 CU. FT. "B"	
ORIGINAL	CASING	UNDISTURBED			

29. LINER RECORD

SIZE	TOP (MD)	BOTTOM (MD)	SACKS CEMENT*	SCREEN (MD)

30. TUBING RECORD

SIZE	DEPTH SET (MD)	PACKER SET (MD)
2 7/8"		5493'

31. PERFORATION RECORD (Interval, size and number)
5417-5466 & 5487-5492' ORIGINAL PERFS

32. ACID, SHOT, FRACTURE, CEMENT SQUEEZE, ETC.

DEPTH INTERVAL (MD)	AMOUNT AND KIND OF MATERIAL USED
8428'	ACIDIZE W/1453 BBLS 15% HCL
5580-7210'	LAT #2 ACID W/34272 GALS 15% HCL

33.* PRODUCTION

DATE FIRST PRODUCTION	PRODUCTION METHOD (Flowing, gas lift, pumping - size and type of pump)	WELL STATUS (Producing or shut-in)
10-30-97	PUMPING	

DATE OF TEST	HOURS TESTED	CHOKE SIZE	PROD'N. FOR TEST PERIOD →	OIL - BBL.	GAS - MCF.	WATER - BBL.	GAS - OIL RATIO
11-03-97	24			190	102	415	

FLOW. TUBING PRESS.	CASING PRESSURE	CALCULATED 24-HOUR RATE →	OIL - BBL.	GAS - MCF.	WATER - BBL.	OIL GRAVITY - API (CORR.)

34. DISPOSITION OF GAS (Sold, used for fuel, vented, etc.)

TEST WITNESSED BY

35. LIST OF ATTACHMENTS
DIRECTIONAL SURVEY

36. I hereby certify that the foregoing and attached information is complete and correct as determined from all available records

SIGNED Sue Moseley for TITLE SHIRLEY HOUCHINS/ENV & REG TECH DATE 12-17-97

*(See Instructions and Spaces for Additional Data on Reverse Side)

Title 18 U.S.C. Section 1001, makes it a crime for any person knowingly and willfully to make to any department or agency of the United States any false, fictitious or fraudulent statements or representations as to any matter within its jurisdicton.

37. SUMMARY OF POROUS ZONES: (Show all important zones of porosity and contents thereof; cored intervals; and all drill-stem, tests, including depth interval tested, cushion used, time tool open, flowing and shut-in pressures, and recoveries):

FORMATION	TOP	BOTTOM	DESCRIPTION, CONTENTS, ETC.
* #4, 20, & 21			LAT #2A1(2) 1321' SOUTH & 1353' EAST F/SURF SPOT LAT #2B1(ST1) 1412' SOUTH & 1502' EAST F/SURF SPOT LAT #3A1(3) 1712' SOUTH & 2464' EAST F/SURF SPOT
** #24			LAT #2A1(2)(5456'-5460'TVD)(5556'-7344' TMD) LAT #2B1(ST1)(5454'-5444' TVD)(6631'-7516' TMD) LAT #3A1(3)(5422'-5419' TVD)(5502'-8416' TMD)

38. GEOLOGIC MARKERS

NAME	TOP	
	MEAS. DEPTH	TRUE VERT. DEPTH

U.S. GOVERNMENT PRINTING OFFICE: 1992-774-672

ExxonMobil Production Compa
U.S. West
P.O. Box 4358
Houston, Texas 77210-4358

June 27, 2001

ExxonMobil
Production

Mr. Jim Thompson
State of Utah, Division of Oil, Gas and Mining
1549 West North Temple
Suite 1210
Salt Lake City, UT 84114-5801

Change of Name – Mobil Oil Corporation to
ExxonMobil Oil Corporation

Dear Mr. Thompson

Effective June 1, 2001, Mobil Oil Corporation (MOC) changed its name to ExxonMobil Oil Corporation (EMOC). This was a name change only; EMOC is the same corporation as Mobil Oil Corporation, but with a new name. No facility or other asset was transferred from one corporation to another by virtue of the name change. Specifically, EMOC will remain the owner and operator of its existing exploration and production oil and gas properties and facilities, as well as relevant permits.

There is no change to the name of Exxon Mobil Corporation, the ultimate shareholder of EMOC.

Please note the change of name of MOC to ExxonMobil Oil Corporation in your records pertaining to any MOC permits.

The Federal Identification Number for MOC (13-5401570) will remain the same for EMOC.

A copy of the Certification, Bond Rider and a list of wells are attached.

If you have any questions please feel free to call Joel Talavera at 713-431-1010

Very truly yours,

Charlotte H. Harper

Charlotte H. Harper
Permitting Supervisor

ExxonMobil Production Company
a division of Exxon Mobil Corporation,
acting for ExxonMobil Oil Corporation

United States Department of the Interior

BUREAU OF INDIAN AFFAIRS
XXXXXXXXXXXXXXX
Navajo Area Office
NAVAJO REGION
P.O. Box 1060
Gallup, New Mexico 87305-1060

IN REPLY REFER TO:

RRES/543

AUG 3 0 2001

CERTIFIED MAIL - RETURN RECEIPT REQUESTED

Charlotte H. Harper, Permitting Supervisor
Exxon Mobil Production Company
U. S. West
P. O. Box 4358
Houston, TX 77210-4358

Dear Ms. Harper:

This is to acknowledge receipt of your company's name change from Mobil Oil Corporation to ExxonMobil Oil Corporation effective June 1, 2001. The receipt of documents includes the Name Change Certification, current listing of Officers and Directors, Listing of Leases, Financial Statement, filing fees of $75.00 and a copy of the Rider for Bond Number 8027 31 97. There are no other changes.

Please note that we will provide copies of these documents to other concerned parties. If you need further assistance, you may contact Ms. Bertha Spencer, Realty Specialist, at (928) 871-5938.

Sincerely,

DENNIS DENETSONE

Regional Realty Officer

cc: BLM, Farmington Field Office w/enclosures
Navajo Nation Minerals Office, Attn: Mr. Akhtar Zaman, Director/w enclosures

MINERAL RESOURCES
ADM 1
NATV AM MIN COORD
SOLID MIN TEAM
PETRO MGMT TEAM 2
O & G INSPECT TEAM
ALL TEAM LEADERS
LAND RESOURCES
ENVIRONMENT
FILES

ExxonMobil Production Company
U.S. West
P.O. Box 4358
Houston, Texas 77210-4358

BB 7/12/2001

543

File

June 27, 2001

ExxonMobil
Production

Certified Mail
Return Receipt Requested

RECEIVED
#477
JUL 3 - 2001
Navajo Region Office
RES - Minerals Section

Ms. Genni Denetsone
United States Department of the Interior
Bureau of Indian Affairs, Navajo Region
Real Estate Services
P. O. Box 1060
Gallup, New Mexico 87305-1060
Mail Code 543

Change of Name –
Mobil Oil Corporation to
ExxonMobil Oil Corporation

Dear Ms. Denetsone:

Effective June 1, 2001, Mobil Oil Corporation (MOC) changed its name to ExxonMobil Oil Corporation (EMOC). This was a name change only; EMOC is the same corporation as Mobil Oil Corporation, but with a new name. No facility or other asset was transferred from one corporation to another by virtue of the name change. Specifically, EMOC will remain the owner and operator of its existing exploration and production oil and gas properties and facilities, as well as relevant permits.

There is no change to the name of Exxon Mobil Corporation, the ultimate shareholder of EMOC.

Please note the change of name of MOC to ExxonMobil Oil Corporation in your records pertaining to any MOC permits.

The Federal Identification Number for MOC (13-5401570) will remain the same for EMOC.

Attached is the Name Change Certification, Current listing of Officers and Directors, Filing Fee of $75/-, Listing of Leases, Financial Statement and a copy of the Rider for Bond number 8027 31 97. The original Bond Rider has been sent to Ms. Barbar Davis at your Washington Office.

If you have any questions , please contact Alex Correa at (713) 431-1012.

Very truly yours,

Charlotte H. Harper

Charlotte H. Harper
Permitting Supervisor

Attachments

RECEIVED
JUL 05 2001
NAVAJO REGION OFFICE
BRANCH OF REAL ESTATE SERVICES

ExxonMobil Production Company
a division of Exxon Mobil Corporation,
acting for ExxonMobil Oil Corporation

NOTE: Check forwarded to Ella Jose

Bureau of Indian Affairs
Navajo Region Office
Attn: RRES - Mineral and Mining Section
P.O. Box 1060
Gallup, New Mexico 87305-1060

Gentlemen:

The current listing of officers and director of ExxonMobil Oil Corporation (Name of Corporation), of New York (State) is as follows:

OFFICERS

President	F.A. Risch	Address	5959 Las Colinas Blvd. Irving, TX 75039
Vice President	K.T. Koonce	Address	800 Bell Street Houston, TX 77002
Secretary	F.L. Reid	Address	5959 Las Colinas Blvd. Irving, TX 75039
Treasure	B.A. Maher	Address	5959 Las Colinas Blvd. Irving, TX 75039

DIRECTORS

Name	D.D. Humphreys	Address	5959 Las Colinas Blvd. Irving, TX 75039
Name	P.A. Hanson	Address	5959 Las Colinas Blvd. Irving, TX 75039
Name	T.P. Townsend	Address	5959 Las Colinas Blvd. Irving, TX 75039
Name	B.A. Maher	Address	5959 Las Colinas Blvd. Irving, TX 75039
Name	F.A. Risch	Address	5959 Las Colinas Blvd. Irving, TX 75039

Sincerely,

Alex Correa

Alex Correa

This is to certify that the above information pertaining to ExxonMobil Oil Corporation (Corporation) is trust and correct as evidenced by the records and accounts covering business for the State of Utah and in the custody of Corporation Service Company (Agent), Phone: 1 (800)927-9800, whose business address is One Utah Center, 201 South Main Street, Salt Lake City, Utah 84111-2218

(CORPORATE SEAL)

Signature

AGENT AND ATTORNEY IN FACT

Title

SAL

CERTIFICATION

I, the undersigned Assistant Secretary of ExxonMobil Oil Corporation. (formerly Mobil Oil Corporation), a corporation organized and existing under the laws of the State of New York, United States of America, DO HEREBY CERTIFY, That, the following is a true and exact copy of the resolutions adopted by the Board of Directors on May 22, 2001:

CHANGE OF COMPANY NAME

WHEREAS, the undersigned Directors of the Corporation deem it to be in the best interest of the Corporation to amend the Certificate of Incorporation of the Corporation to change the name and principal office of the Corporation:

NOW THEREFORE BE IT RESOLVED, That Article 1st relating to the corporate name is hereby amended to read as follows:

"1st The corporate name of said Company shall be,

ExxonMobil Oil Corporation",

FURTHER RESOLVED, That the amendment of the Corporation's Certificate of Incorporation referred to in the preceding resolutions be submitted to the sole shareholder of the Corporation entitled to vote thereon for its approval and, if such shareholder gives its written consent, pursuant to Section 803 of the Business Corporation Law of the State of New York, approving such amendment, the proper officers of the Corporation be, and they hereby are, authorized to execute in the name of the Corporation the Certificate of Amendment of Certificate of Incorporation, in the form attached hereto;

FURTHER RESOLVED, That the proper officers of the Corporation be and they hereby are authorized and directed to deliver, file and record in its behalf, the Certificate of Amendment of Certificate of Incorporation, and to take such action as may be deemed necessary or advisable to confirm and make effective in all respects the change of this Company's name to EXXONMOBIL OIL CORPORATION.

WITNESS, my hand and the seal of the Corporation at Irving, Texas, this 8th day of June, 2001.

S. A. Millican
Assistant Secretary

COUNTY OF DALLAS)
STATE OF TEXAS)
UNITED STATES OF AMERICA)
Sworn to and subscribed before me at Irving, Texas, U. S. A. on this the 8th day of June, 2001.

Janice M. Phillips
Notary Public

LISTING OF LEASES OF MOBIL OIL CORPORATION

	Lease Number
1)	14-20-0603-6504
2)	14-20-0603-6505
3)	14-20-0603-6506
4)	14-20-0603-6508
5)	14-20-0603-6509
6)	14-20-0603-6510
7)	14-20-0603-7171
8)	14-20-0603-7172A
9)	14-20-600-3530
10)	14-20-603-359
11)	14-20-603-368
12)	14-20-603-370
13)	14-20-603-370A
14)	14-20-603-372
15)	14-20-603-372A
16)	14-20-603-4495
17)	14-20-603-5447
18)	14-20-603-5448
19)	14-20-603-5449
20)	14-20-603-5450
21)	14-20-603-5451

6/1/01

CHUBB GROUP OF INSURANCE COMPANIES

[illegible] South, Suite 1700, Houston, Texas 77027-3301
[illegible] 713 297-4600 • Facsimile: (713) 297-4750

NW Bond

FEDERAL INSURANCE COMPANY RIDER
to be attached to and form a part of

BOND NO 8027 31 97
wherein
Mobil Oil Corporation and Mobil Exploration and Producing U.S., Inc. is named as Principal and

FEDERAL INSURANCE COMPANY AS SURETY,

in favor of **United States of America, Department of the Interior Bureau of Indian Affairs**

in the amount of **$150,000.00**
bond date: 11/01/65

IT IS HEREBY UNDERSTOOD AND AGREED THAT effective **June 1, 2001** the name of the Principal is changed

FROM: **Mobil Oil Corporation and Mobil Exploration and Producing U.S., Inc.**

TO : **ExxonMobil Oil Corporation**

All other terms and conditions of this Bond are unchanged.

Signed, sealed and dated this 12th of June, 2001.

ExxonMobil Oil Corporation
By :

FEDERAL INSURANCE COMPANY
By: Mary Pierson
Mary Pierson, Attorney-in-fact

Chubb Surety	POWER OF ATTORNEY	Federal Insurance Company Vigilant Insurance Company Pacific Indemnity Company	Attn.: Surety Department 15 Mountain View Road Warren, NJ 07059

Know All by These Presents, That FEDERAL INSURANCE COMPANY, an Indiana corporation, VIGILANT INSURANCE COMPANY, a New York corporation, and PACIFIC INDEMNITY COMPANY, a Wisconsin corporation, do each hereby constitute and appoint R.F. Bobo, Mary Pierson, Philana Berros, and Jody E. Specht of Houston, Texas----------

each as their true and lawful Attorney-in-Fact to execute under such designation in their names and to affix their corporate seals to and deliver for and on their behalf as surety thereon or otherwise, bonds and undertakings and other writings obligatory in the nature thereof (other than bail bonds) given or executed in the course of business, and any instruments amending or altering the same, and consents to the modification or alteration of any instrument referred to in said bonds or obligations.

In Witness Whereof, said FEDERAL INSURANCE COMPANY, VIGILANT INSURANCE COMPANY, and PACIFIC INDEMNITY COMPANY have each executed and attested these presents and affixed their corporate seals on this 10th day of May, 2001.

Kenneth C. Wendel, Assistant Secretary

Frank E. Robertson, Vice President

STATE OF NEW JERSEY }
County of Somerset } ss.

On this 10th day of May, 2001, before me, a Notary Public of New Jersey, personally came Kenneth C. Wendel, to me known to be Assistant Secretary of FEDERAL INSURANCE COMPANY, VIGILANT INSURANCE COMPANY, and PACIFIC INDEMNITY COMPANY, the companies which executed the foregoing Power of Attorney, and the said Kenneth C. Wendel being by me duly sworn, did depose and say that he is Assistant Secretary of FEDERAL INSURANCE COMPANY, VIGILANT INSURANCE COMPANY, and PACIFIC INDEMNITY COMPANY and knows the corporate seals thereof, that the seals affixed to the foregoing Power of Attorney are such corporate seals and were thereto affixed by authority of the By-Laws of said Companies; and that he signed said Power of Attorney as Assistant Secretary of said Companies by like authority; and that he is acquainted with Frank E. Robertson, and knows him to be Vice President of said Companies; and that the signature of Frank E. Robertson, subscribed to said Power of Attorney is in the genuine handwriting of Frank E. Robertson, and was thereto subscribed by authority of said Companies and in deponent's presence.

Karen A. Price
Notary Public State of New Jersey
No. 2231647
Commission Expires Oct. 28, 2004

Notary Public

CERTIFICATION

Extract from the By-Laws of FEDERAL INSURANCE COMPANY, VIGILANT INSURANCE COMPANY, and PACIFIC INDEMNITY COMPANY:

"All powers of attorney for and on behalf of the Company may and shall be executed in the name and on behalf of the Company, either by the Chairman or the President or a Vice President or an Assistant Vice President, jointly with the Secretary or an Assistant Secretary, under their respective designations. The signature of such officers may be engraved, printed or lithographed. The signature of each of the following officers: Chairman, President, any Vice President, any Assistant Vice President, any Secretary, any Assistant Secretary and the seal of the Company may be affixed by facsimile to any power of attorney or to any certificate relating thereto appointing Assistant Secretaries or Attorneys-in-Fact for purposes only of executing and attesting bonds and undertakings and other writings obligatory in the nature thereof, and any such power of attorney or certificate bearing such facsimile signature or facsimile seal shall be valid and binding upon the Company and any such power so executed and certified by such facsimile signature and facsimile seal shall be valid and binding upon the Company with respect to any bond or undertaking to which it is attached."

I, Kenneth C. Wendel, Assistant Secretary of FEDERAL INSURANCE COMPANY, VIGILANT INSURANCE COMPANY, and PACIFIC INDEMNITY COMPANY (the "Companies") do hereby certify that

(i) the foregoing extract of the By-Laws of the Companies is true and correct,
(ii) the Companies are duly licensed and authorized to transact surety business in all 50 of the United States of America and the District of Columbia and are authorized by the U. S. Treasury Department; further, Federal and Vigilant are licensed in Puerto Rico and the U. S. Virgin Islands, and Federal is licensed in American Samoa, Guam, and each of the Provinces of Canada except Prince Edward Island; and
(iii) the foregoing Power of Attorney is true, correct and in full force and effect.

Given under my hand and seals of said Companies at Warren, NJ this 12th day of June, 2001.

Kenneth C. Wendel, Assistant Secretary

IN THE EVENT YOU WISH TO NOTIFY US OF A CLAIM, VERIFY THE AUTHENTICITY OF THIS BOND OR NOTIFY US OF ANY OTHER MATTER, PLEASE CONTACT US AT ADDRESS LISTED ABOVE, OR BY
Telephone (908) 903-3485 Fax (908) 903-3656 e-mail: surety@chubb.com

15-10-0225 (Ed. 4-99) CONSENT

F010601000187

CSC 45

CERTIFICATE OF AMENDMENT

OF

CERTIFICATE OF INCORPORATION

OF

MOBIL OIL CORPORATION

(Under Section 805 of the Business Corporation Law)

Pursuant to the provisions of Section 805 of the Business Corporation Law, the undersigned President and Secretary, respectively, of Mobil Oil Corporation hereby certify:

FIRST: That the name of the corporation is MOBIL OIL CORPORATION and that said corporation was incorporated under the name of Standard Oil Company of New York.

SECOND: That the Certificate of Incorporation of the corporation was filed by the Department of State, Albany, New York, on the 10th day of August, 1882.

THIRD: That the amendments to the Certificate of Incorporation effected by this Certificate are as follows:

(a) Article 1st of the Certificate of Incorporation, relating to the corporate name, is hereby amended to read as follows:

"1st The corporate name of said Company shall be,

ExxonMobil Oil Corporation",

(b) Article 7th of the Certificate of Incorporation, relating to the office of the corporation is hereby amended to read as follows:

The office of the corporation within the State of New York is to be located in the County of Albany. The Company shall have offices at such other places as the Board of Directors may from time to time determine.

FOURTH: That the amendments to the Certificate of Incorporation were authorized by the Board of Directors followed by the holder of all outstanding shares entitled to vote on amendments to the Certificate of Incorporation by written consent of the sole shareholder dated May 22, 2001.

IN WITNESS WHEREOF, this Certificate has been signed this 22nd Day of May, 2001.

F. A. Risch, President

STATE OF TEXAS)
COUNTY OF DALLAS)

F. L. REID, being duly sworn, deposes and says that he is the Secretary of MOBIL OIL CORPORATION, the corporation mentioned and described in the foregoing instrument; that he has read and signed the same and that the statements contained therein are true.

F. L. REID, Secretary

SUBSCRIBED AND SWORN TO before me, the undersigned authority, on this the 22nd day of May, 2001.

[SEAL]

NOTARY PUBLIC, STATE OF TEXAS

JANICE M. PHILLIPS
MY COMMISSION EXPIRES
May 16, 2002

F010601000187

CSC 45

CERTIFICATE OF AMENDMENT

OF

MOBIL OIL CORPORATION

Under Section 805 of the Business Corporation Law

SRC

100 cc

STATE OF NEW YORK
DEPARTMENT OF STATE
FILED JUN 01 2001
TAX $ _____
BY: SRC

Filed by: EXXONMOBIL CORPORATION
(Name)

5959 Las Colinas Blvd.
(Mailing address)

Irving, TX 75039-2298
(City, State and Zip code)

NY Albany

Cust Ref # 1655781MPS

RECEIVED
JUL 05 2001
REAL ESTATE SERVICES

010601000195

State of New York }
Department of State } *ss:*

I hereby certify that the annexed copy has been compared with the original document in the custody of the Secretary of State and that the same is a true copy of said original.

Witness my hand and seal of the Department of State on JUN 01 2001

STATE OF NEW YORK ★ DEPARTMENT OF STATE ★

Special Deputy Secretary of State

DOS-1266 (7/00)

Division of Oil, Gas and Mining

OPERATOR CHANGE WORKSHEET

ROUTING
1. GLH
2. CDW ✓
3. FILE

Change of Operator (Well Sold) — Designation of Agent

X Operator Name Change — Merger

The operator of the well(s) listed below has changed, effective: **06-01-2001**

FROM: (Old Operator):	**TO:** (New Operator):
MOBIL EXPLORATION & PRODUCTION	EXXONMOBIL OIL CORPORATION
Address: P O BOX DRAWER "G"	Address: U S WEST P O BOX 4358
CORTEZ, CO 81321	HOUSTON, TX 77210-4358
Phone: 1-(970)-564-5212	Phone: 1-(713)-431-1010
Account No. N7370	Account No. N1855

CA No. **Unit:** **RATHERFORD**

WELL(S)

NAME	SEC TWN RNG	API NO	ENTITY NO	LEASE TYPE	WELL TYPE	WELL STATUS
RATHERFORD UNIT 1-34	01-41S-23E	43-037-16385	6280	INDIAN	OW	P
RATHERFORD UNIT 1-14	01-41S-23E	43-037-31162	6280	INDIAN	OW	P
RATHERFORD 11-41	11-41S-23E	43-037-31544	6280	INDIAN	OW	P
RATHERFORD UNIT 11-43	11-41S-23E	43-037-31622	6280	INDIAN	OW	P
12-14	12-41S-23E	43-037-15844	6280	INDIAN	OW	P
RATHERFORD UNIT 12-23 (MULTI-LEG)	12-41S-23E	43-037-15846	6280	INDIAN	OW	P
RATHERFORD UNIT 12-34	12-41S-23E	43-037-31126	6280	INDIAN	OW	P
RATHERFORD UNIT 12-12	12-41S-23E	43-037-31190	6280	INDIAN	OW	P
RATHERFORD UNIT 12-21	12-41S-23E	43-037-31201	6280	INDIAN	OW	P
RATHERFORD UNIT 12-43	12-41S-23E	43-037-31202	6280	INDIAN	OW	P
RATHERFORD UNIT 12-32	12-41S-23E	43-037-31203	6280	INDIAN	OW	P
RATHERFORD UNIT 13-41	13-41S-23E	43-037-15856	6280	INDIAN	OW	P
N DESERT CR 32-13 (13-32)	13-41S-23E	43-037-16406	6280	INDIAN	OW	S
RATHERFORD UNIT 13-12	13-41S-23E	43-037-31127	6280	INDIAN	OW	P
RATHERFORD UNIT 13-21	13-41S-23E	43-037-31128	6280	INDIAN	OW	P
RATHERFORD UNIT 13-23	13-41S-23E	43-037-31129	6280	INDIAN	OW	P
RATHERFORD UNIT 13-34 (RE-ENTRY)	13-41S-23E	43-037-31130	6280	INDIAN	OW	P
RATHERFORD UNIT 13-43	13-41S-23E	43-037-31131	6280	INDIAN	OW	P
RATHERFORD UNIT 13-14	13-41S-23E	43-037-31589	6280	INDIAN	OW	P
14-32	14-41S-23E	43-037-15858	6280	INDIAN	OW	P

OPERATOR CHANGES DOCUMENTATION

Enter date after each listed item is completed

1. (R649-8-10) Sundry or legal documentation was received from the **FORMER** operator on: 06/29/2001
2. (R649-8-10) Sundry or legal documentation was received from the **NEW** operator on: 06/29/2001
3. The new company has been checked through the **Department of Commerce, Division of Corporations Database on:** 04/09/2002
4. Is the new operator registered in the State of Utah: YES Business Number: 579865-0143
5. If **NO**, the operator was contacted contacted on: N/A

6. **Federal and Indian Lease Wells:** The BLM and or the BIA has approved the merger, name change, or operator change for all wells listed on Federal or Indian leases on: BIA-06/01/01

7. **Federal and Indian Units:**
The BLM or BIA has approved the successor of unit operator for wells listed on: 06/01/2001

8. **Federal and Indian Communization Agreements ("CA"):**
The BLM or BIA has approved the operator for all wells listed within a CA on: N/A

9. **Underground Injection Control ("UIC")** The Division has approved UIC Form 5, **Transfer of Authority to Inject,** for the enhanced/secondary recovery unit/project for the water disposal well(s) listed on: N/A

DATA ENTRY:

1. Changes entered in the **Oil and Gas Database on:** 04/12/2002
2. Changes have been entered on the **Monthly Operator Change Spread Sheet on:** 04/12/2002
3. Bond information entered in RBDMS on: N/A
4. Fee wells attached to bond in RBDMS on: N/A

STATE WELL(S) BOND VERIFICATION:

1. State well(s) covered by Bond Number: N/A

FEDERAL WELL(S) BOND VERIFICATION:

1. Federal well(s) covered by Bond Number: N/A

INDIAN WELL(S) BOND VERIFICATION:

1. Indian well(s) covered by Bond Number: 80273197

FEE WELL(S) BOND VERIFICATION:

1. (R649-3-1) The **NEW** operator of any fee well(s) listed covered by Bond Number N/A
2. The **FORMER** operator has requested a release of liability from their bond on: N/A
   The Division sent response by letter on: N/A

LEASE INTEREST OWNER NOTIFICATION:

3. (R649-2-10) The **FORMER** operator of the fee wells has been contacted and informed by a letter from the Division of their responsibility to notify all interest owners of this change on: N/A

COMMENTS:

Division of Oil, Gas and Mining

OPERATOR CHANGE WORKSHEET

ROUTING
1. DJJ
2. CDW

X Change of Operator (Well Sold) Operator Name Change/Merger

The operator of the well(s) listed below has changed, effective: **6/1/2006**

FROM: (Old Operator):	**TO:** (New Operator):
N1855-ExxonMobil Oil Corporation	N2700-Resolute Natural Resources Company
PO Box 4358	1675 Broadway, Suite 1950
Houston, TX 77210-4358	Denver, CO 80202
Phone: 1 (281) 654-1936	Phone: 1 (303) 534-4600

CA No. **Unit:** **RATHERFORD**

OPERATOR CHANGES DOCUMENTATION

Enter date after each listed item is completed

1. (R649-8-10) Sundry or legal documentation was received from the **FORMER** operator on: 4/21/2006
2. (R649-8-10) Sundry or legal documentation was received from the **NEW** operator on: 4/24/2006
3. The new company was checked on the **Department of Commerce, Division of Corporations Database on:** 6/7/2006
4. Is the new operator registered in the State of Utah: YES Business Number: 5733505-0143
5. If **NO**, the operator was contacted contacted on:

6a. (R649-9-2)Waste Management Plan has been received on: requested

6b. Inspections of LA PA state/fee well sites complete on: n/a

6c. Reports current for Production/Disposition & Sundries on: ok

7. **Federal and Indian Lease Wells:** The BLM and or the BIA has approved the merger, name change, or operator change for all wells listed on Federal or Indian leases on: BLM n/a BIA not yet
8. **Federal and Indian Units:** The BLM or BIA has approved the successor of unit operator for wells listed on: not yet
9. **Federal and Indian Communization Agreements ("CA"):** The BLM or BIA has approved the operator for all wells listed within a CA on: n/a
10. **Underground Injection Control ("UIC")** The Division has approved UIC Form 5, **Transfer of Authority to Inject,** for the enhanced/secondary recovery unit/project for the water disposal well(s) listed on: 6/12/2006

DATA ENTRY:

1. Changes entered in the **Oil and Gas Database on:** 6/22/2006
2. Changes have been entered on the **Monthly Operator Change Spread Sheet on:** 6/22/2006
3. Bond information entered in RBDMS on: n/a
4. Fee/State wells attached to bond in RBDMS on: n/a
5. Injection Projects to new operator in RBDMS on: 6/22/2006
6. Receipt of Acceptance of Drilling Procedures for APD/New on: n/a

BOND VERIFICATION:

1. Federal well(s) covered by Bond Number: n/a
2. Indian well(s) covered by Bond Number: PA002769
3. (R649-3-1) The **NEW** operator of any fee well(s) listed covered by Bond Number n/a

a. The **FORMER** operator has requested a release of liability from their bond on: n/a
The Division sent response by letter on: n/a

LEASE INTEREST OWNER NOTIFICATION:

4. (R649-2-10) The **FORMER** operator of the fee wells has been contacted and informed by a letter from the Division of their responsibility to notify all interest owners of this change on: n/a

COMMENTS:

FORM 9

STATE OF UTAH
DEPARTMENT OF NATURAL RESOURCES
DIVISION OF OIL, GAS AND MINING

5. LEASE DESIGNATION AND SERIAL NUMBER:	See attached list
6. IF INDIAN, ALLOTTEE OR TRIBE NAME:	Navajo Tribe
7. UNIT or CA AGREEMENT NAME:	Ratherford Unit
8. WELL NAME and NUMBER:	See attached list
9. API NUMBER:	Attached
10. FIELD AND POOL, OR WILDCAT:	Greater Aneth

SUNDRY NOTICES AND REPORTS ON WELLS

Do not use this form for proposals to drill new wells, significantly deepen existing wells below current bottom-hole depth, reenter plugged wells, or to drill horizontal laterals. Use APPLICATION FOR PERMIT TO DRILL form for such proposals.

1. TYPE OF WELL: OIL WELL ☐ GAS WELL ☐ OTHER Unit Agreement

2. NAME OF OPERATOR: Resolute Natural Resources Company N2700

3. ADDRESS OF OPERATOR: 1675 Broadway, Suite 1950 CITY Denver STATE CO ZIP 80202 PHONE NUMBER: (303) 534-4600

4. LOCATION OF WELL
FOOTAGES AT SURFACE: See attached list COUNTY: San Juan
QTR/QTR, SECTION, TOWNSHIP, RANGE, MERIDIAN: STATE: UTAH

11. CHECK APPROPRIATE BOXES TO INDICATE NATURE OF NOTICE, REPORT, OR OTHER DATA

TYPE OF SUBMISSION	TYPE OF ACTION		
☐ NOTICE OF INTENT (Submit in Duplicate)	☐ ACIDIZE	☐ DEEPEN	☐ REPERFORATE CURRENT FORMATION
Approximate date work will start: _____	☐ ALTER CASING	☐ FRACTURE TREAT	☐ SIDETRACK TO REPAIR WELL
	☐ CASING REPAIR	☐ NEW CONSTRUCTION	☐ TEMPORARILY ABANDON
	☐ CHANGE TO PREVIOUS PLANS	☑ OPERATOR CHANGE	☐ TUBING REPAIR
	☐ CHANGE TUBING	☐ PLUG AND ABANDON	☐ VENT OR FLARE
☑ SUBSEQUENT REPORT (Submit Original Form Only)	☐ CHANGE WELL NAME	☐ PLUG BACK	☐ WATER DISPOSAL
Date of work completion:	☐ CHANGE WELL STATUS	☐ PRODUCTION (START/RESUME)	☐ WATER SHUT-OFF
_____	☐ COMMINGLE PRODUCING FORMATIONS	☐ RECLAMATION OF WELL SITE	☐ OTHER: _____
	☐ CONVERT WELL TYPE	☐ RECOMPLETE - DIFFERENT FORMATION	

12. DESCRIBE PROPOSED OR COMPLETED OPERATIONS. Clearly show all pertinent details including dates, depths, volumes, etc.

Effective June 1, 2006 Exxon Mobil Oil Corporation resigns as operator of the Ratherford Unit. Also effective June 1, 2006 Resolute Natural Resources Company is designated as successor operator of the Ratherford Unit.

A list of affected producing and water source wells is attached. A separate of affected injection wells is being submitted with UIC Form 5, Transfer of Authority to Inject.

As of the effective date, bond coverage for the affected wells will transfer to BIA Bond # PA002769.

NAME (PLEASE PRINT) Dwight E Mallory TITLE Regulatory Coordinator

SIGNATURE Dwight E Mallory DATE 4/20/2006

(This space for State use only)

APPROVED 6/27/06
Earlene Russell
Division of Oil, Gas and Mining
Earlene Russell, Engineering Technician

RECEIVED
APR 24 2006
DIV. OF OIL, GAS & MINING

(5/2000) (See Instructions on Reverse Side)

FORM 9

STATE OF UTAH
DEPARTMENT OF NATURAL RESOURCES
DIVISION OF OIL, GAS AND MINING

5. LEASE DESIGNATION AND SERIAL NUMBER:

SUNDRY NOTICES AND REPORTS ON WELLS

6. IF INDIAN, ALLOTTEE OR TRIBE NAME: Ship Rock

Do not use this form for proposals to drill new wells, significantly deepen existing wells below current bottom-hole depth, reenter plugged wells, or to drill horizontal laterals. Use APPLICATION FOR PERMIT TO DRILL form for such proposals.

7. UNIT or CA AGREEMENT NAME: UTU68931A

1. TYPE OF WELL: OIL WELL ☑ GAS WELL ☐ OTHER

8. WELL NAME and NUMBER: Ratherford

2. NAME OF OPERATOR: ExxonMobil Oil Corporation N1855

9. API NUMBER: attached

3. ADDRESS OF OPERATOR: P.O. Box 4358 CITY Houston STATE TX ZIP 77210-4358

PHONE NUMBER: (281) 654-1936

10. FIELD AND POOL, OR WILDCAT: Aneth

4. LOCATION OF WELL

FOOTAGES AT SURFACE:

COUNTY: San Juan

QTR/QTR, SECTION, TOWNSHIP, RANGE, MERIDIAN:

STATE: UTAH

11. CHECK APPROPRIATE BOXES TO INDICATE NATURE OF NOTICE, REPORT, OR OTHER DATA

TYPE OF SUBMISSION	TYPE OF ACTION		
☑ NOTICE OF INTENT (Submit in Duplicate)	☐ ACIDIZE	☐ DEEPEN	☐ REPERFORATE CURRENT FORMATION
Approximate date work will start: 6/1/2006	☐ ALTER CASING	☐ FRACTURE TREAT	☐ SIDETRACK TO REPAIR WELL
	☐ CASING REPAIR	☐ NEW CONSTRUCTION	☐ TEMPORARILY ABANDON
	☐ CHANGE TO PREVIOUS PLANS	☑ OPERATOR CHANGE	☐ TUBING REPAIR
	☐ CHANGE TUBING	☐ PLUG AND ABANDON	☐ VENT OR FLARE
☐ SUBSEQUENT REPORT (Submit Original Form Only)	☐ CHANGE WELL NAME	☐ PLUG BACK	☐ WATER DISPOSAL
	☐ CHANGE WELL STATUS	☐ PRODUCTION (START/RESUME)	☐ WATER SHUT-OFF
Date of work completion:	☐ COMMINGLE PRODUCING FORMATIONS	☐ RECLAMATION OF WELL SITE	☐ OTHER:
	☐ CONVERT WELL TYPE	☐ RECOMPLETE - DIFFERENT FORMATION	

12. DESCRIBE PROPOSED OR COMPLETED OPERATIONS. Clearly show all pertinent details including dates, depths, volumes, etc.

ExxonMobil Oil Corporation is transferring operatorship of Greater Aneth field, Ratherford lease to Resolute Natural Resources Company. All change of operator notices should be made effective as of 7:00 AM MST on June 1, 2006.

Attached please find a listing of producers and water source wells included in the transfer.

NAME (PLEASE PRINT) Laurie Kilbride TITLE Permitting Supervisor

SIGNATURE Laurie B. Kilbride DATE 4/19/2006

(This space for State use only)

APPROVED 6/27/06
Earlene Russell
Division of Oil, Gas and Mining
Earlene Russell, Engineering Technician

(See Instructions on Reverse Side)

RECEIVED
APR 21 2006
DIV. OF OIL, GAS & MINING

(5/2000)

Ratherford Unit - Producer Well List

minus P&A's

Lease	Number	API #	Status	Lease #	Location					
					Sec	T	R	QTR/QTR	NSFoot	EWFoot
Ratherford	01-14	430373116200S1	Producing	1420603246A	1	41S	23E	SWSW	0660FSL	0660FWL
Ratherford	01-34	430371638501S1	SI	1420603246A	1	41S	23E	SWSE	1133FSL	1980FEL
Ratherford	11-41	430373154400S1	Producing	1420603246A	11	41S	23E	NENE	0860FNL	0350FEL
Ratherford	11-43	430373162201S1	Producing	1420603246A	11	41S	23E	NESE	1980FSL	0660FEL
Ratherford	12-12	430373119000S1	Producing	1420603246A	12	41S	23E	SWNW	1850FNL	0660FWL
Ratherford	12-14	430371584400S1	SI	1420603246A	12	41S	23E	SWSW	0660FSL	4622FEL
Ratherford	12-21	430373120100S1	Producing	1420603246A	12	41S	23E	NENW	0660FNL	1980FWL
Ratherford	12-23	430371584601S1	Producing	1420603246A	12	41S	23E	NESW	1958FSL	3300FEL
Ratherford	12-32	430373120300S1	Producing	1420603246A	12	41S	23E	SWNE	1820FNL	1820FEL
Ratherford	12-34	430373112600S1	Producing	1420603246A	12	41S	23E	SWSE	0675FSL	1905FEL
Ratherford	12-43	430373120200S1	SI	1420603246A	12	41S	23E	NESE	2100FSL	0660FEL
Ratherford	13-12	430373112701S1	Producing	1420603247A	13	41S	23E	SWNW	1705FNL	0640FWL
Ratherford	13-14	430373158900S1	Producing	1420603247A	13	41S	23E	SWSW	0660FSL	0660FWL
Ratherford	13-21	430373112801S1	SI	1420603247A	13	41S	23E	NENW	0660FNL	1920FWL
Ratherford	13-23	430373112900S1	Producing	1420603247A	13	41S	23E	NESW	1980FSL	1930FWL
Ratherford	13-34	430373113001S1	Producing	1420603247A	13	41S	23E	SWSE	0660FSL	1980FEL
Ratherford	13-41	430371585601S1	Producing	1420603247A	13	41S	23E	NENE	660FNL	660FEL
Ratherford	13-43	430373113100S1	Producing	1420603247A	13	41S	23E	NESE	1700FSL	0960FEL
Ratherford	14-32	430371585801S1	Producing	1420603247A	14	41S	23E	SWNE	2130FNL	1830FEL
Ratherford	14-41	430373162300S1	Producing	1420603247A	14	41S	23E	NENE	0521FNL	0810FEL
Ratherford	24-32	430373159300S1	Producing	1420603247A	24	41S	23E	SWNE	2121FNL	1846FEL
Ratherford	24-41	430373113200S1	Producing	1420603247A	24	41S	23E	NENE	0660FNL	0710FEL
Ratherford	17-11	430373116900S1	Producing	1420603353	17	41S	24E	NWNW	1075FNL	0800FWL
Ratherford	17-13	430373113301S1	Producing	1420603353	17	41S	24E	NWSW	2100FSL	0660FWL
Ratherford	17-22	430373117001S1	Producing	1420603353	17	41S	24E	SENW	1882FNL	1910FWL
Ratherford	17-24	430373104400S1	Producing	1420603353	17	41S	24E	SESW	0720FSL	1980FWL
Ratherford	17-31	430373117800S1	Producing	1420603353	17	41S	24E	NWNE	0500FNL	1980FEL
Ratherford	17-33	430373113400S1	Producing	1420603353	17	41S	24E	NWSE	1980FSL	1845FEL
Ratherford	17-42	430373117700S1	Producing	1420603353	17	41S	24E	SENE	1980FNL	0660FEL
Ratherford	17-44	430371573201S1	Producing	1420603353	17	41S	24E	SESE	0660FSL	0660FEL
Ratherford	18-11	430371573300S1	SI	1420603353	18	41S	24E	NWNW	0720FNL	0730FWL
Ratherford	18-13	430371573401S1	Producing	1420603353	18	41S	24E	NWSW	1980FSL	0500FWL
Ratherford	18-22	430373123600S1	Producing	1420603353	18	41S	24E	SENW	2200FNL	2210FWL
Ratherford	18-24	430373107900S1	Producing	1420603353	18	41S	24E	SESW	0760FSL	1980FWL
Ratherford	18-31	430373118101S1	Producing	1420603353	18	41S	24E	NWNE	0795FNL	2090FEL
Ratherford	18-33	430373113501S1	Producing	1420603353	18	41S	24E	NWSE	1870FSL	1980FEL
Ratherford	18-42	430373118200S1	Producing	1420603353	18	41S	24E	SENE	2120FNL	0745FEL
Ratherford	18-44	430373104500S1	SI	1420603353	18	41S	24E	SESE	0660FSL	0660FEL
Ratherford	19-11	430373108000S1	Producing	1420603353	19	41S	24E	NWNW	0660FNL	0660FWL
Ratherford	19-13	430373171900S1	Producing	1420603353	19	41S	24E	NWSW	1980FSL	0660FWL
Ratherford	19-22	430373104601S1	Producing	1420603353	19	41S	24E	SENW	1840FNL	1980FWL
Ratherford	19-24	430373175401S1	Producing	1420603353	19	41S	24E	SESW	0600FSL	1980FWL
Ratherford	19-31	430373104701S1	Producing	1420603353	19	41S	24E	NWNE	510FNL	1980FEL
Ratherford	19-33	430373104800S1	Producing	1420603353	19	41S	24E	NWSE	1980FSL	1980FEL
Ratherford	19-42	430373091600S1	Producing	1420603353	19	41S	24E	SENE	1880FNL	0660FEL
Ratherford	19-44	430373108100S1	Producing	1420603353	19	41S	24E	SESE	0660FSL	0660FEL
Ratherford	19-97	430373159600S1	Producing	1420603353	19	41S	24E	SENE	2562FNL	0030FEL
Ratherford	20-11	430373104900S1	Producing	1420603353	20	41S	24E	NWNW	0500FNL	0660FWL
Ratherford	20-13	430373091700S1	Producing	1420603353	20	41S	24E	NWSW	2140FSL	0500FWL
Ratherford	20-22	430373093000S1	Producing	1420603353	20	41S	24E	SENW	2020FNL	2090FWL
Ratherford	20-24	430373091800S1	Producing	1420603353	20	41S	24E	SESW	0820FSL	1820FWL

Ratherford Unit - Producer Well List

minus P&A's

Lease	Number	API #	Status	Lease #	Location					
					Sec	T	R	QTR/QTR	NSFoot	EWFoot
Ratherford	20-31	430373105001S1	Producing	1420603353	20	41S	24E	NWNE	0660FNL	1880FEL
Ratherford	20-33	430373093100S1	Producing	1420603353	20	41S	24E	NWSE	1910FSL	2140FEL
Ratherford	20-42	430373105100S1	Producing	1420603353	20	41S	24E	SENE	1980FNL	0660FEL
Ratherford	20-44	430373091501S1	Producing	1420603353	20	41S	24E	SESE	0620FSL	0760FEL
Ratherford	20-66	430373159201S1	Producing	1420603353	20	41S	24E	SWNW	1369FNL	1221FWL
Ratherford	20-68	430373159100S1	Producing	1420603353	20	41S	24E	NWSW	1615FSL	1276FWL
Ratherford	15-12	430371571501S1	Producing	1420603355	15	41S	24E	SWNW	1820FNL	0500FWL
Ratherford	15-22	430373044900S1	SI	1420603355	15	41S	24E	SENW	1980FNL	2050FWL
Ratherford	15-32	430371571700S1	Producing	1420603355	15	41S	24E	SWNE	1980FNL	1980FEL
Ratherford	15-33	430371571800S1	Producing	1420603355	15	41S	24E	NWSE	1650FSL	1980FEL
Ratherford	15-41	430371571900S1	TA	1420603355	15	41S	24E	NENE	0660FNL	0660FEL
Ratherford	15-42	430373044800S1	Producing	1420603355	15	41S	24E	SENE	2020FNL	0820FEL
Ratherford	16-13	430373116801S1	Producing	1420603355	16	41S	24E	NWSW	1980FSL	660FWL
Ratherford	16-32	430371572300S1	Producing	1420603355	16	41S	24E	SWNE	1980FNL	1980FEL
Ratherford	16-41	430371572500S1	Producing	1420603355	16	41S	24E	NENE	0660FNL	0660FEL
Ratherford	16-77	430373176800S1	Producing	1420603355	16	41S	24E	NESW	2587FSL	2410FWL
Ratherford	21-23	430371375400S1	Producing	1420603355	21	41S	24E	NESW	1740FSL	1740FWL
Ratherford	21-24	430373172001S1	SI	1420603355	21	41S	24E	SESW	487FSL	2064FWL
Ratherford	21-32	430371575500S1	SI	1420603355	21	41S	24E	SWNE	1880FNL	1980FEL
Ratherford	21-77	430373175801S1	SI	1420603355	21	41S	24E	NWSE	2511FSL	2446FEL
Ratherford	07-11	430373116300S1	Producing	1420603368	7	41S	24E	NWNW	0660FNL	0710FWL
Ratherford	07-13	430373116400S1	Producing	1420603368	7	41S	24E	NWSW	2110FSL	0740FWL
Ratherford	07-22	430373116500S1	Producing	1420603368	7	41S	24E	SENW	1980FNL	1980FWL
Ratherford	07-24	430373116600S1	Producing	1420603368	7	41S	24E	SESW	0880FSL	2414FWL
Ratherford	07-44	430373118900S1	SI	1420603368	7	41S	24E	SESE	0737FSL	0555FEL
Ratherford	08-12	430371599100S1	Producing	1420603368	8	41S	24E	SWNW	1909FNL	0520FWL
Ratherford	08-21	430371599300S1	Producing	1420603368	8	41S	24E	NENW	0616FNL	1911FWL
Ratherford	08-23	430371599400S1	Producing	1420603368	8	41S	24E	NESW	1920FSL	2055FWL
Ratherford	08-32	430371599500S1	Producing	1420603368	8	41S	24E	SWNE	1980FNL	1980FEL
Ratherford	08-34	430371599600S1	Producing	1420603368	8	41S	24E	SWSE	0660FSL	1980FEL
Ratherford	04-34	430371616400S1	Producing	14206034035	4	41S	24E	SWSE	0660FSL	1980FEL
Ratherford	11-14	430371616700S1	Producing	14206034037	11	41S	24E	SWSW	0660FSL	0660FWL
Ratherford	09-34	430371571100S1	SI	14206034043	9	41S	24E	SWSE	0660FSL	1980FEL
Ratherford	10-12	430371571200S1	Producing	14206034043	10	41S	24E	SWNW	1980FNL	0660FWL
Ratherford	10-14	430371571300S1	Producing	14206034043	10	41S	24E	SWSW	0510FSL	0710FWL
Ratherford	10-32	430371571400S1	TA	14206034043	10	41S	24E	SWNE	2080FNL	1910FEL
Ratherford	10-44	430373045100S1	TA	14206034043	10	41S	24E	SESE	0820FSL	0510FEL
Ratherford	29-11	430373105300S1	Producing	1420603407	29	41S	24E	NWNW	0770FNL	0585FWL
Ratherford	29-22	430373108200S1	Producing	1420603407	29	41S	24E	SENW	2130FNL	1370FWL
Ratherford	29-31	430373091401S1	Producing	1420603407	29	41S	24E	NWNE	0700FNL	2140FEL
Ratherford	29-33	430373093200S1	SI	1420603407	29	41S	24E	NWSE	1860FSL	1820FEL
Ratherford	29-34	430371534000S1	SI	1420603407	29	41S	24E	SWSE	0817FSL	2096FEL
Ratherford	29-42	430373093700S1	SI	1420603407	29	41S	24E	SENE	1850FNL	0660FEL
Ratherford	30-32	430371534200S1	Producing	1420603407	30	41S	24E	SWNE	1975FNL	2010FEL
Ratherford	28-11	430373044600S1	Producing	1420603409	28	41S	24E	NWNW	0520FNL	0620FWL

Ratherford Unit - Producer Well List

minus P&A's

Lease	Number	API #	Status	Lease #	Location					
					Sec	T	R	QTR/QTR	NSFoot	EWFoot
Ratherford	09-12	430371512600S1	Producing	14206035045	9	41S	24E	SWNW	1865FNL	0780FWL
Ratherford	09-14	430371512700S1	Producing	14206035046	9	41S	24E	SWSW	0695FSL	0695FWL
Ratherford	04-14	430371616300S1	Producing	14206035446	4	41S	24E	SWSW	0500FSL	0660FWL
Ratherford	03-12	430371562000S1	Producing	14206036506	3	41S	24E	SWNW	2140FNL	0660FWL

Water Source Wells (Feb 2006)

RU	S1	4303700001	Active
RU	S2	4303700002	Active
RU	S3	4303700003	Active
RU	S4	4303700004	Active
RU	S5	4303700005	Active
RU	S6	4303700006	Active
RU	S7	4303700007	Active
RU	S8	4303700008	Active
RU	S9	4303700009	Active
RU	S10	4303700010	Active
RU	S11	4303700011	Active
RU	S12	4303700012	Active
RU	S13	4303700013	Active
RU	S14	4303700014	Active
RU	S16	4303700016	Active
RU	S17	4303700017	Active

Sundry Number: 55857 API Well Number: 43037311300000

FEDERAL APPROVAL OF THIS ACTION IS NECESSARY

STATE OF UTAH
DEPARTMENT OF NATURAL RESOURCES
DIVISION OF OIL, GAS, AND MINING

FORM 9

5.LEASE DESIGNATION AND SERIAL NUMBER:
14-20-603-247A

SUNDRY NOTICES AND REPORTS ON WELLS

Do not use this form for proposals to drill new wells, significantly deepen existing wells below current bottom-hole depth, reenter plugged wells, or to drill horizontal laterals. Use APPLICATION FOR PERMIT TO DRILL form for such proposals.

6. IF INDIAN, ALLOTTEE OR TRIBE NAME:
NAVAJO

7.UNIT or CA AGREEMENT NAME:
RATHERFORD

1. TYPE OF WELL
Oil Well

8. WELL NAME and NUMBER:
RATHERFORD UNIT 13-34 (RE-ENTRY)

2. NAME OF OPERATOR:
RESOLUTE NATURAL RESOURCES

9. API NUMBER:
43037311300000

3. ADDRESS OF OPERATOR:
1700 Lincoln Street, Suite 2800 , Denver, CO, 80203 4535

PHONE NUMBER:
303 534-4600 Ext

9. FIELD and POOL or WILDCAT:
GREATER ANETH

4. LOCATION OF WELL
FOOTAGES AT SURFACE:
0660 FSL 1980 FEL
QTR/QTR, SECTION, TOWNSHIP, RANGE, MERIDIAN:
Qtr/Qtr: SWSE Section: 13 Township: 41.0S Range: 23.0E Meridian: S

COUNTY:
SAN JUAN

STATE:
UTAH

11.
CHECK APPROPRIATE BOXES TO INDICATE NATURE OF NOTICE, REPORT, OR OTHER DATA

TYPE OF SUBMISSION	TYPE OF ACTION		
✓ NOTICE OF INTENT Approximate date work will start: 9/25/2014	☐ ACIDIZE	☐ ALTER CASING	☐ CASING REPAIR
	☐ CHANGE TO PREVIOUS PLANS	☐ CHANGE TUBING	☐ CHANGE WELL NAME
	☐ CHANGE WELL STATUS	☐ COMMINGLE PRODUCING FORMATIONS	☐ CONVERT WELL TYPE
☐ SUBSEQUENT REPORT Date of Work Completion:	☐ DEEPEN	☐ FRACTURE TREAT	☐ NEW CONSTRUCTION
	☐ OPERATOR CHANGE	☐ PLUG AND ABANDON	☐ PLUG BACK
	☐ PRODUCTION START OR RESUME	☐ RECLAMATION OF WELL SITE	☐ RECOMPLETE DIFFERENT FORMATION
☐ SPUD REPORT Date of Spud:	☐ REPERFORATE CURRENT FORMATION	☐ SIDETRACK TO REPAIR WELL	☐ TEMPORARY ABANDON
	☐ TUBING REPAIR	☐ VENT OR FLARE	☐ WATER DISPOSAL
☐ DRILLING REPORT Report Date:	☐ WATER SHUTOFF	☐ SI TA STATUS EXTENSION	☐ APD EXTENSION
	☐ WILDCAT WELL DETERMINATION	✓ OTHER	OTHER: ESP Replacement

12. DESCRIBE PROPOSED OR COMPLETED OPERATIONS. Clearly show all pertinent details including dates, depths, volumes, etc.

Resolute Natural Resources respectfully submits this sundry as notice that a failed ESP assembly will be replaced on the above location. Attached are the procedures and schematic

Accepted by the Utah Division of Oil, Gas and Mining

Date: October 07, 2014

By: Dark K Quist

NAME (PLEASE PRINT)	PHONE NUMBER	TITLE
Erin Joseph	303 573-4886	Sr. Regulatory Analyst

SIGNATURE	DATE
N/A	9/23/2014

RECEIVED: Sep. 23, 2014

RESOLUTE
NATURAL RESOURCES

RU 13-34- ESP Replacement

Procedure

Horsley Witten: NO

1) MIRU WSU. LOTO equipment. Test rig anchors as required.
2) Kill well as necessary. **NOTE: 1000 ppm H2S reported on the Jan 19, 2011 pull report.**
3) NDWH. NU BOP. Test BOP.
4) MIRU ESP cable spooler & cap string spooler. Well has 60' cap string.
5) POOH with the 2-7/8" tubing, ESP assembly, ESP cable, and 60' capillary string.
6) Stand back tubing & inspect for condition. Call Bill Albert for tubing inspection at (970) 371-9682 or call Tech Support: Virgil Holly (435) 444-0020 or Nate Dee (435) 730-5442.
7) Lay down failed ESP assembly, documenting the condition & if possible, cause of failure.
8) Make bit & scraper trip to 5294' KB/top of upper window. POOH.
9) RIH with replacement ESP assembly & Centinel, ESP cable, 2-7/8" tubing, including 2-7/8" check valve two joints above the ESP & sliding sleeve w/2.313 'X' profile 1 joint above the check valve. Run 1/4" cap string to 60' depth.
10) Land tubing w/ ESP assembly bottom at ~5275' as before.
11) Perform WH penetrator tie-ins at tubing hanger for ESP cable & capillary string and land tubing.
12) ND BOPE. NUWH. Re-connect to VSD and transformer.
13) Perform necessary tests to ensure that the pump is ready to be returned to production.
14) Notify Operations Supervisor Alfred Redhouse (435) 619-7227 that the well is ready to return to production.
15) RDMOL.
16) Hook up appropriate chemical treatment.

RATHERFORD UNIT # 13-34
GREATER ANETH FIELD
Surface Loc: 660' FSL & 1980' FEL
SEC 13-T41S-R23E
SAN JUAN COUNTY, UTAH
API 43-037-31130
PRISM 0043010

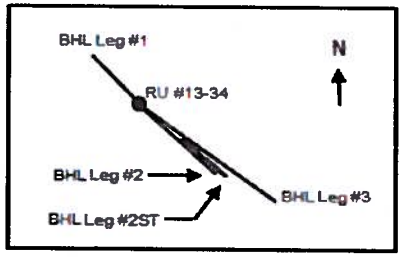
B.H. Location Lateral #1:
910' N & 801' W of Surface Location

B.H. Location Lateral #2:
1318' S & 1358' E of Surface Location

B.H. Location Lateral #2ST:
1412' S & 1501' E of Surface Location

B.H. Location Lateral #3:
1830' S & 2377' E of Surface Location

PRODUCER



STATE OF UTAH
DEPARTMENT OF NATURAL RESOURCES
DIVISION OF OIL, GAS, AND MINING

FORM 9

5.LEASE DESIGNATION AND SERIAL NUMBER:
14-20-603-247A

SUNDRY NOTICES AND REPORTS ON WELLS

Do not use this form for proposals to drill new wells, significantly deepen existing wells below current bottom-hole depth, reenter plugged wells, or to drill horizontal laterals. Use APPLICATION FOR PERMIT TO DRILL form for such proposals.

6. IF INDIAN, ALLOTTEE OR TRIBE NAME:
NAVAJO

7.UNIT or CA AGREEMENT NAME:
RATHERFORD

1. TYPE OF WELL
Oil Well

8. WELL NAME and NUMBER:
RATHERFORD UNIT 13-34 (RE-ENTRY)

2. NAME OF OPERATOR:
RESOLUTE NATURAL RESOURCES

9. API NUMBER:
43037311300000

3. ADDRESS OF OPERATOR:
1700 Lincoln Street, Suite 2800 , Denver, CO, 80203 4535

PHONE NUMBER:
303 534-4600 Ext

9. FIELD and POOL or WILDCAT:
GREATER ANETH

4. LOCATION OF WELL
FOOTAGES AT SURFACE:
0660 FSL 1980 FEL
QTR/QTR, SECTION, TOWNSHIP, RANGE, MERIDIAN:
Qtr/Qtr: SWSE Section: 13 Township: 41.0S Range: 23.0E Meridian: S

COUNTY:
SAN JUAN

STATE:
UTAH

11.
CHECK APPROPRIATE BOXES TO INDICATE NATURE OF NOTICE, REPORT, OR OTHER DATA

TYPE OF SUBMISSION	TYPE OF ACTION		
☐ NOTICE OF INTENT Approximate date work will start:	☐ ACIDIZE	☐ ALTER CASING	☐ CASING REPAIR
☑ SUBSEQUENT REPORT Date of Work Completion: 10/2/2014	☐ CHANGE TO PREVIOUS PLANS	☐ CHANGE TUBING	☐ CHANGE WELL NAME
☐ SPUD REPORT Date of Spud:	☐ CHANGE WELL STATUS	☐ COMMINGLE PRODUCING FORMATIONS	☐ CONVERT WELL TYPE
☐ DRILLING REPORT Report Date:	☐ DEEPEN	☐ FRACTURE TREAT	☐ NEW CONSTRUCTION
	☐ OPERATOR CHANGE	☐ PLUG AND ABANDON	☐ PLUG BACK
	☐ PRODUCTION START OR RESUME	☐ RECLAMATION OF WELL SITE	☐ RECOMPLETE DIFFERENT FORMATION
	☐ REPERFORATE CURRENT FORMATION	☐ SIDETRACK TO REPAIR WELL	☐ TEMPORARY ABANDON
	☐ TUBING REPAIR	☐ VENT OR FLARE	☐ WATER DISPOSAL
	☐ WATER SHUTOFF	☐ SI TA STATUS EXTENSION	☐ APD EXTENSION
	☐ WILDCAT WELL DETERMINATION	☑ OTHER	OTHER: ESP Replacement

12. DESCRIBE PROPOSED OR COMPLETED OPERATIONS. Clearly show all pertinent details including dates, depths, volumes, etc.

Resolute Natural Resources respectfully submits this sundry as notice that the ESP replacement has been completed according to previously approved procedures.

Accepted by the
Utah Division of
Oil, Gas and Mining
FOR RECORD ONLY
November 24, 2014

NAME (PLEASE PRINT)	PHONE NUMBER	TITLE
Erin Joseph	303 573-4886	Sr. Regulatory Analyst
SIGNATURE		**DATE**
N/A		11/24/2014

RECEIVED: Nov. 24, 2014

Sundry Number: 64689 API Well Number: 43037311300000

FEDERAL APPROVAL OF THIS ACTION IS NECESSARY

FORM 9

STATE OF UTAH
DEPARTMENT OF NATURAL RESOURCES
DIVISION OF OIL, GAS, AND MINING

5.LEASE DESIGNATION AND SERIAL NUMBER:
14-20-603-247A

SUNDRY NOTICES AND REPORTS ON WELLS

Do not use this form for proposals to drill new wells, significantly deepen existing wells below current bottom-hole depth, reenter plugged wells, or to drill horizontal laterals. Use APPLICATION FOR PERMIT TO DRILL form for such proposals.

6. IF INDIAN, ALLOTTEE OR TRIBE NAME:
NAVAJO

7.UNIT or CA AGREEMENT NAME:
RATHERFORD

1. TYPE OF WELL
Oil Well

8. WELL NAME and NUMBER:
RATHERFORD UNIT 13-34 (RE-ENTRY)

2. NAME OF OPERATOR:
RESOLUTE NATURAL RESOURCES

9. API NUMBER:
43037311300000

3. ADDRESS OF OPERATOR:
1700 Lincoln Street, Suite 2800 , Denver, CO, 80203 4535

PHONE NUMBER:
303 534-4600 Ext

9. FIELD and POOL or WILDCAT:
GREATER ANETH

4. LOCATION OF WELL
FOOTAGES AT SURFACE:
0660 FSL 1980 FEL
QTR/QTR, SECTION, TOWNSHIP, RANGE, MERIDIAN:
Qtr/Qtr: SWSE Section: 13 Township: 41.0S Range: 23.0E Meridian: S

COUNTY:
SAN JUAN

STATE:
UTAH

11.
CHECK APPROPRIATE BOXES TO INDICATE NATURE OF NOTICE, REPORT, OR OTHER DATA

TYPE OF SUBMISSION	TYPE OF ACTION		
✓ NOTICE OF INTENT Approximate date work will start: 7/15/2015	☐ ACIDIZE	☐ ALTER CASING	☐ CASING REPAIR
	☐ CHANGE TO PREVIOUS PLANS	☐ CHANGE TUBING	☐ CHANGE WELL NAME
	☐ CHANGE WELL STATUS	☐ COMMINGLE PRODUCING FORMATIONS	☐ CONVERT WELL TYPE
☐ SUBSEQUENT REPORT Date of Work Completion:	☐ DEEPEN	☐ FRACTURE TREAT	☐ NEW CONSTRUCTION
	☐ OPERATOR CHANGE	☐ PLUG AND ABANDON	☐ PLUG BACK
	☐ PRODUCTION START OR RESUME	☐ RECLAMATION OF WELL SITE	☐ RECOMPLETE DIFFERENT FORMATION
☐ SPUD REPORT Date of Spud:	☐ REPERFORATE CURRENT FORMATION	☐ SIDETRACK TO REPAIR WELL	☐ TEMPORARY ABANDON
	☐ TUBING REPAIR	☐ VENT OR FLARE	☐ WATER DISPOSAL
☐ DRILLING REPORT Report Date:	☐ WATER SHUTOFF	☐ SI TA STATUS EXTENSION	☐ APD EXTENSION
	☐ WILDCAT WELL DETERMINATION	✓ OTHER	OTHER: ESP Replacement

12. DESCRIBE PROPOSED OR COMPLETED OPERATIONS. Clearly show all pertinent details including dates, depths, volumes, etc.

Resolute Natural Resources respectfully submits this sundry as notice of a ESP replacement. Attached are the procedures and schematic.

Accepted by the Utah Division of Oil, Gas and Mining

Date: July 09, 2015

By: Dark K Quist

NAME (PLEASE PRINT)	PHONE NUMBER	TITLE
Erin Joseph	303 573-4886	Sr. Regulatory Analyst

SIGNATURE	DATE
N/A	7/7/2015

RECEIVED: Jul. 07, 2015

Resolute
Natural Resources

Re: RU 13-34 ESP Replacement

Procedure
Horsley Witten: NO
1) MIRU WSU. LOTO equipment. Test rig anchors as required. 2) RU WL & shift open the sliding sleeve at 5125.3' KB. Kill well as required with circ down tbg, up casing. 3) NDWH. NU BOP. Test BOP. 4) MIRU ESP cable spooler & cap string spooler. Well has 60' cap string. 5) POOH with the 2-7/8" tubing, ESP assembly, ESP cable, and 60' capillary string. 6) Stand back tubing & inspect for condition. Call Bill Albert for tubing inspection (970) 371-9682 or Tech Support: Virgil Holly (435) 444-0020 or Nate Dee (435) 730-5442. 7) Lay down failed ESP assembly, documenting the condition & if possible, cause of failure. 8) Skip the bit & scraper trip (to 5294' KB/top window) **IF** no sign of scale on pulled equipt - 9 month run. 9) RIH with replacement ESP assembly & Centinel, ESP cable, 2-7/8" tubing, including 2-7/8" check valve two joints above the ESP & sliding sleeve w/2.313 'X' profile 1 joint above the check valve. 10) Run 1/4" cap string to 60' depth as before; inspect & pressure test the existing one & re-run it if condition is good. 11) Land tubing w/ ESP assembly bottom at ~5275' KB as before. 12) Perform WH penetrator tie-ins at tubing hanger for ESP cable & capillary string and land tubing. 13) ND BOPE. NUWH. Re-connect to VSD and transformer. 14) Perform necessary tests to ensure that the pump is ready to be returned to production. 15) Notify Operations Supervisor Alfred Redhouse (435) 619-7227 that the well is ready to return to production. 16) RDMOL. 17) Hook up appropriate chemical treatment.

RATHERFORD UNIT # 13-34
GREATER ANETH FIELD
Surface Loc: 660' FSL & 1980' FEL
SEC 13-T41S-R23E
SAN JUAN COUNTY, UTAH
API 43-037-31130
PRISM 0043010

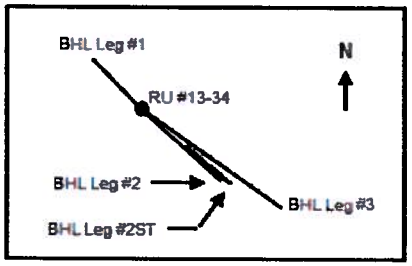
B.H. Location Lateral #1:
910' N & 801' W of Surface Location

B.H. Location Lateral #2ST:
1412' S & 1501' E of Surface Location

B.H. Location Lateral #2:
1318' S & 1358' E of Surface Location

B.H. Location Lateral #3:
1830' S & 2377' E of Surface Location

PRODUCER



STATE OF UTAH
DEPARTMENT OF NATURAL RESOURCES
DIVISION OF OIL, GAS, AND MINING

FORM 9

5.LEASE DESIGNATION AND SERIAL NUMBER: 14-20-603-247A

SUNDRY NOTICES AND REPORTS ON WELLS

Do not use this form for proposals to drill new wells, significantly deepen existing wells below current bottom-hole depth, reenter plugged wells, or to drill horizontal laterals. Use APPLICATION FOR PERMIT TO DRILL form for such proposals.

6. IF INDIAN, ALLOTTEE OR TRIBE NAME: NAVAJO

7.UNIT or CA AGREEMENT NAME: RATHERFORD

1. TYPE OF WELL Oil Well

8. WELL NAME and NUMBER: RATHERFORD UNIT 13-34 (RE-ENTRY)

2. NAME OF OPERATOR: RESOLUTE NATURAL RESOURCES

9. API NUMBER: 43037311300000

3. ADDRESS OF OPERATOR: 1700 Lincoln Street, Suite 2800 , Denver, CO, 80203 4535

PHONE NUMBER: 303 534-4600 Ext

9. FIELD and POOL or WILDCAT: GREATER ANETH

4. LOCATION OF WELL
FOOTAGES AT SURFACE: 0660 FSL 1980 FEL
QTR/QTR, SECTION, TOWNSHIP, RANGE, MERIDIAN: Qtr/Qtr: SWSE Section: 13 Township: 41.0S Range: 23.0E Meridian: S

COUNTY: SAN JUAN

STATE: UTAH

11. CHECK APPROPRIATE BOXES TO INDICATE NATURE OF NOTICE, REPORT, OR OTHER DATA

TYPE OF SUBMISSION	TYPE OF ACTION		
☐ NOTICE OF INTENT Approximate date work will start:	☐ ACIDIZE	☐ ALTER CASING	☐ CASING REPAIR
✓ SUBSEQUENT REPORT Date of Work Completion: 7/28/2015	☐ CHANGE TO PREVIOUS PLANS	☐ CHANGE TUBING	☐ CHANGE WELL NAME
☐ SPUD REPORT Date of Spud:	☐ CHANGE WELL STATUS	☐ COMMINGLE PRODUCING FORMATIONS	☐ CONVERT WELL TYPE
☐ DRILLING REPORT Report Date:	☐ DEEPEN	☐ FRACTURE TREAT	☐ NEW CONSTRUCTION
	☐ OPERATOR CHANGE	☐ PLUG AND ABANDON	☐ PLUG BACK
	☐ PRODUCTION START OR RESUME	☐ RECLAMATION OF WELL SITE	☐ RECOMPLETE DIFFERENT FORMATION
	☐ REPERFORATE CURRENT FORMATION	☐ SIDETRACK TO REPAIR WELL	☐ TEMPORARY ABANDON
	☐ TUBING REPAIR	☐ VENT OR FLARE	☐ WATER DISPOSAL
	☐ WATER SHUTOFF	☐ SI TA STATUS EXTENSION	☐ APD EXTENSION
	☐ WILDCAT WELL DETERMINATION	✓ OTHER	OTHER: esp replacement

12. DESCRIBE PROPOSED OR COMPLETED OPERATIONS. Clearly show all pertinent details including dates, depths, volumes, etc.

Resolute Natural Resources respectfully submits this sundry as notice that the esp replacement was completed according to previously approved procedures

Accepted by the Utah Division of Oil, Gas and Mining
FOR RECORD ONLY
November 19, 2015

NAME (PLEASE PRINT)	PHONE NUMBER	TITLE
Erin Joseph	303 573-4886	Sr. Regulatory Analyst
SIGNATURE N/A		**DATE** 11/18/2015

RECEIVED: Nov. 18, 2015

FEDERAL APPROVAL OF THIS ACTION IS NECESSARY

FORM 9

STATE OF UTAH
DEPARTMENT OF NATURAL RESOURCES
DIVISION OF OIL, GAS, AND MINING

5.LEASE DESIGNATION AND SERIAL NUMBER: 14-20-603-247A

SUNDRY NOTICES AND REPORTS ON WELLS

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6. IF INDIAN, ALLOTTEE OR TRIBE NAME: NAVAJO

7.UNIT or CA AGREEMENT NAME: RATHERFORD

1. TYPE OF WELL Oil Well

8. WELL NAME and NUMBER: RATHERFORD UNIT 13-34 (RE-ENTRY)

2. NAME OF OPERATOR: RESOLUTE NATURAL RESOURCES

9. API NUMBER: 43037311300000

3. ADDRESS OF OPERATOR: 1700 Lincoln Street, Suite 2800 , Denver, CO, 80203 4535

PHONE NUMBER: 303 534-4600 Ext

9. FIELD and POOL or WILDCAT: GREATER ANETH

4. LOCATION OF WELL
FOOTAGES AT SURFACE: 0660 FSL 1980 FEL
QTR/QTR, SECTION, TOWNSHIP, RANGE, MERIDIAN: Qtr/Qtr: SWSE Section: 13 Township: 41.0S Range: 23.0E Meridian: S

COUNTY: SAN JUAN

STATE: UTAH

11. CHECK APPROPRIATE BOXES TO INDICATE NATURE OF NOTICE, REPORT, OR OTHER DATA

TYPE OF SUBMISSION	TYPE OF ACTION		
✓ NOTICE OF INTENT Approximate date work will start: 11/20/2015	☐ ACIDIZE	☐ ALTER CASING	☐ CASING REPAIR
	☐ CHANGE TO PREVIOUS PLANS	☐ CHANGE TUBING	☐ CHANGE WELL NAME
	☐ CHANGE WELL STATUS	☐ COMMINGLE PRODUCING FORMATIONS	☐ CONVERT WELL TYPE
☐ SUBSEQUENT REPORT Date of Work Completion:	☐ DEEPEN	☐ FRACTURE TREAT	☐ NEW CONSTRUCTION
	☐ OPERATOR CHANGE	☐ PLUG AND ABANDON	☐ PLUG BACK
	☐ PRODUCTION START OR RESUME	☐ RECLAMATION OF WELL SITE	☐ RECOMPLETE DIFFERENT FORMATION
☐ SPUD REPORT Date of Spud:	☐ REPERFORATE CURRENT FORMATION	☐ SIDETRACK TO REPAIR WELL	☐ TEMPORARY ABANDON
	☐ TUBING REPAIR	☐ VENT OR FLARE	☐ WATER DISPOSAL
☐ DRILLING REPORT Report Date:	☐ WATER SHUTOFF	☐ SI TA STATUS EXTENSION	☐ APD EXTENSION
	☐ WILDCAT WELL DETERMINATION	✓ OTHER	OTHER: ESP repair

12. DESCRIBE PROPOSED OR COMPLETED OPERATIONS. Clearly show all pertinent details including dates, depths, volumes, etc.

Resolute proposes to attempt repairs to the ESP on the subject well. The proposed procedure and schematics are attached.

Accepted by the Utah Division of Oil, Gas and Mining

Date: ~~November 23, 2015~~

By: Dark K Quist

NAME (PLEASE PRINT)	PHONE NUMBER	TITLE
Sherry Glass	303 573-4886	Sr Regulatory Analyst
SIGNATURE N/A		**DATE** 11/19/2015

RECEIVED: Nov. 19, 2015

RESOLUTE
NATURAL RESOURCES

November 18, 2015
1420603247A
UTU68931A
4303731130
RU 13-34 ESP Repair

Recommendation

The production engineer and operations staff at **Ratherford Unit** recommend moving a workover rig onto triple lateral producing well **RU 13-34** to either repair the failed submersible pump, or TA the well. If the motor lead extension (MLE) is the cause of failure, the plan is to re-run the existing three month old equipment with new MLE. If there is further damage to the existing equipment, it will be pulled & returned to Centrilift and the well will be temporarily abandoned. The workover is expected to restore production to 17 BOPD, 2269 BWPD, and 19 MCFD.

Job Scope

Job Scope: Pull 2-7/8 tubing & ESP, replace MLE, run back same ESP equipment. Alternative: TA the well with plug set above perfs & kill string only installed.
Acid planned? N; Change of tubing size? N; Paraffin expected? N)

Work History

10/10/1985: Initial Completion Test, vertical wellbore - 64 bopd, 4 bwpd, 21 mcfd, 40 API crude oil, rod pumped.
5/27/1995: Drilled lateral #1, 5417' to 6620' TD, acidized the OH lateral w/13,356 gal 15% acid.
4/6/1997: CTU Acid - Pulled rods, Acidized lateral #1 down CT w/16,000 gal 15% HCl acid, swabbed back, Ran ESP & returned to production.
10/3/1997: Finished drilling laterals #2, 2ST, and 3. Re-ran ESP, returned to production.
11/3/1997: Recompletion test 190 bopd, 415 bwpd, 102 mcfd.
5/8/2003: ESP Replacement - Hot oiled w/90 bbls total, killed w/13 ppg; pulled & replaced ESP, pumped 60 bbls FW down tbg to displace mud out of pump, Returned to production.
5/2/2006: ESP Replacement - Killed w/14.5 ppg; pulled & replaced ESP, pumped 130 bbls FW down tbg to displace mud out of pump, Returned to production.
1/18/2011: ESP Replacement - Flowed back 1040 bbls total; H2S 1000 ppm; Killed well w/15.5 ppg mud, pulled tbg & failed ESP; made bit & scraper run, tagged at 5310' KB in lateral #3; Acidized w/4095 gal acid; Ran new ESP & cable w/60' cap string; Landed tbg, ND BOP, NU tree, Backflowed mud up tubing until water appeared; Returned to production.
9/2/2014: Xylene & Acid treatment down backside - Pumped 4 drums xylene, 6 drums 15% HCl down backside w/162 bbls FW displacement behind, re-started ESP & circulated the well, then switched down the flowline.
9/24/14: ESP Replacement - Pulled & LD failed ESP, motor lead extension failure; motor OK & all shafts turning freely; had one joint above ck valve packed with iron sulfide; made bit & scraper run to 5292' (top window at 5294'); Ran new P-23SSD pump, 189 HP motor, Centinel, new #4 cable & 1/4" x 60' cap string, new 2-7/8 SMLS FBNAU tubing, landed, started pump.
7/16/2015: ESP Replacement - Pulled & LD failed ESP, twisted pump shaft failure; gas sep had scale around intake & on shaft, motor OK; MLE appeared damaged at pothead - probably from drag thru tite spot on POOH; tbg & ESP had scale, lower tbg collars had corrosion; laid down tubing string; made bit & scraper run to 5230' tag (was top of pump depth); unable to work past with tongs; POOH & RIH w/tapered & watermelon mills, mill hard 5230-34' scale or csg damage; RIH to top window 5294', PU 5' circ clean; POOH. Ran new P-31/G-31 pump, gas sep, 210 HP motor, Centinel, new #4 cable & 1/4" x 5075' cap string, ran 2-7/8 YB tubing w/check valve 2 jts above esp & sliding sleeve 1 jt above ck valve, landed ~1 joint shallower to avoid milled out area of casing; returned to production.

Procedure

Horsley Witten: NO

1) MIRU WSU. LOTO equipment. Test rig anchors as required.
2) RU WL & shift open the sliding sleeve at 5077.5' KB. Kill well as required with circ down tbg, up casing.
3) NDWH. NU BOP. Test BOP.
4) MIRU ESP cable spooler & cap string spooler. Well has 5075' cap string to top of sliding sleeve.
5) POOH with the 2-7/8” tubing, ESP assembly, ESP cable, and capillary string.
6) Stand back tubing. Call Bill Albert for tubing inspection (970) 371-9682 or Tech Support: Virgil Holly (435) 444-0020 or Nate Dee (435) 730-5442.
7) Inspect/evaluate failed ESP assembly for cause of failure. Replace suspected failed MLE & re-run the equipment if it checks OK.

RECEIVED: Nov. 19, 2015

IMPORTANT: If there is additional damage to the ESP beyond the MLE, it will be laid down & returned to Centrilift. TA of the wellbore will follow - see procedure below.

8) Skip the bit & scraper trip (to 5294' KB/top window) **IF** no sign of scale on pulled equipt, ~ 4 month run.

9) Re-run ESP assembly w/new MLE, Centinel, ESP cable, sliding sleeve w/2.313 'X' profile 2 jts above ESP, cap string to top of sliding sleeve as before; **no check valve**, 2-7/8" tubing. Land near the previous landing depth except for the necessary shortening of the ESP cable for new splices.

10) Pressure test & re-run the existing 1/4" cap string if the condition is generally good.

11) Land tubing w/ ESP assembly bottom no deeper than 5225' KB, or shallower given the cable shortening for splices.

12) Perform WH penetrator tie-ins at tubing hanger for ESP cable & capillary string and land tubing.

13) ND BOPE. NUWH. Re-connect to VSD and transformer.

14) Perform necessary tests to ensure that the pump is ready to be returned to production.

15) Notify Operations Supervisor Alfred Redhouse (435) 619-7227 that the well is ready to return to production.

16) RDMOL.

17) Hook up appropriate chemical treatment.

TA PROCEDURE:

1. RU E-line & set 7" cibp at ~5225' KB. Re-tag after setting to ensure it stayed put.
   Correlation Log = Gearhart CBL dated 9-5-1985
2. RIH with workstring to cibp.
3. Close pipe rams & test cibp and 7" casing to 500 psi/30 min. Chart the results.
4. Displace wellbore to inhibited packer fluid.
5. POOH, laying down tubing. Leave 60 jts kill string hung off in the well.
6. ND BOPE, NU B-1 flange w/bull plug & pressure gauge.
7. RDMOL.

RECEIVED: Nov. 19, 2015

RATHERFORD UNIT # 13-34
GREATER ANETH FIELD
Surface Loc: 660' FSL & 1980' FEL
SEC 13-T41S-R23E
SAN JUAN COUNTY, UTAH
API 43-037-31130
PRISM 0043010

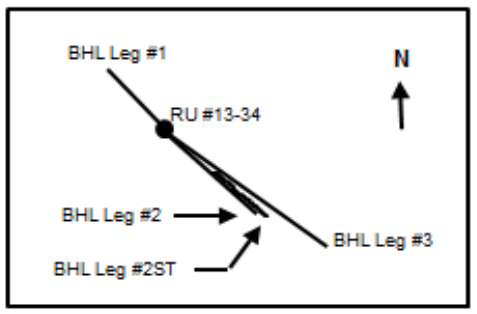
B.H. Location Lateral #1:
910' N & 801' W of Surface Location

B.H. Location Lateral #2:
1318' S & 1358' E of Surface Location

B.H. Location Lateral #2ST:
1412' S & 1501' E of Surface Location

B.H. Location Lateral #3:
1830' S & 2377' E of Surface Location

PRODUCER



KB 4701' GL 4688'

Hole Size: 17.5"

Conductor Pipe: 13-3/8" 54.5# K-55 set at 121' w/ 150 sx. Circ to surface. 5-26-85

Hole Size: 12-1/4"

9-5/8" 36# K-55 set at 1546' w/ 695 sx cmt. Circ to surface. Fill csg to top w/ 100 sx cmt. 5-26-85

Hole Size: 8-3/4"

ESP BHA dated 7/27/2015:
2-7/8" Sliding Sleeve @ 5077.5' KB
2-7/8" Check valve @ 5113.2' KB
Top of pump @ 5180.7' KB
Pump Intake @ 5199.0' KB
Seal @ 5202.2' KB
Motor @ 5209.2 – 5226.0' KB
Centinel @ 5226.0 – 5230.1' KB
Tbg Sub 5230.1 – 5234.1' KB

2-7/8" 6.5# J-55 Tbg 7-27-2015

Lateral #3 :
TMD 8416', TVD 5419'
Inc. 89.3, Azimuth 124.4,
South 1830', East 2377',
VS 3003'. 10-3-97

Openhole Lateral #3 5302-8416' TD MD
(window in csg at 5294-5302')
Lat. #3

Openhole Lateral #2 5330-7344' TD MD
(window in csg at 5321-30')
Lat. #2

TIW Big Bore Whipstock Pkr at 5338' 10-5-97

Openhole Lateral #2ST 6656-7516' TD MD
Lat. #2 Sidetrack

Lat. #1 Openhole Lateral #1 5417-6620' TD MD
(window in csg at 5413-38')

5417-66' drilled out cmt to 5417' 9-7-85
5487-92' 9-7-85

Lateral #1:
TMD 6620', TVD 5464',
Inc. 72.5, Azimuth 307.0,
North 910' , West 801',
VS 1210'. 5-27-95

Lateral #2 :
TMD 7344', TVD 5461'
Inc. 88.4, Azimuth 132.3,
South 1318', East 1358',
VS 1906'

Lateral #2ST :
TMD 7516', TVD 5444'
Inc. 86.9, Azimuth 137.6,
South 1412', East 1501',
VS 2063'. 9-27-97

PBTD 5508' 9-7-85
TD 5518' 7-30-85

7" 23# & 26# K-55 set at 5517'
w/ 850 sx. TOC at 1650' CBL 7-30-85

K.B. Duhon 11-15-02 R.U. #13-34

RECEIVED: Nov. 19, 2015

Sundry Number: 67826 API Well Number: 43037311300000

Form 3160-5
(August 2007)

UNITED STATES
DEPARTMENT OF THE INTERIOR
BUREAU OF LAND MANAGEMENT

FORM APPROVED
OMB NO. 1004-0135
Expires: July 31, 2010

SUNDRY NOTICES AND REPORTS ON WELLS

Do not use this form for proposals to drill or to re-enter an abandoned well. Use form 3160-3 (APD) for such proposals.

SUBMIT IN TRIPLICATE - Other instructions on reverse side.

5. Lease Serial No.
1420603247A

6. If Indian, Allottee or Tribe Name

7. If Unit or CA/Agreement, Name and/or No.
UTU68931A

1. Type of Well
☒ Oil Well ☐ Gas Well ☐ Other

8. Well Name and No.
RATHERFORD 13-34

2. Name of Operator
RESOLUTE ANETH
Contact: SHERRY GLASS
E-Mail: sglass@resoluteenergy.com

9. API Well No.
43-037-31130

3a. Address
1700 LINCOLN STREET SUITE 2800
DENVER, CO 80203

3b. Phone No. (include area code)
Ph: 303-573-4886 Ext: 1580

10. Field and Pool, or Exploratory
ANETH

4. Location of Well *(Footage, Sec., T., R., M., or Survey Description)*
Sec 13 T41S R23E Mer NAV SWSE 660FSL 1980FEL

11. County or Parish, and State
SAN JUAN COUNTY, UT

12. CHECK APPROPRIATE BOX(ES) TO INDICATE NATURE OF NOTICE, REPORT, OR OTHER DATA

TYPE OF SUBMISSION	TYPE OF ACTION			
☒ Notice of Intent	☐ Acidize	☐ Deepen	☐ Production (Start/Resume)	☐ Water Shut-Off
☐ Subsequent Report	☐ Alter Casing	☐ Fracture Treat	☐ Reclamation	☐ Well Integrity
☐ Final Abandonment Notice	☐ Casing Repair	☐ New Construction	☐ Recomplete	☒ Other Workover Operations
	☐ Change Plans	☐ Plug and Abandon	☐ Temporarily Abandon	
	☐ Convert to Injection	☐ Plug Back	☐ Water Disposal	

13. Describe Proposed or Completed Operation (clearly state all pertinent details, including estimated starting date of any proposed work and approximate duration thereof. If the proposal is to deepen directionally or recomplete horizontally, give subsurface locations and measured and true vertical depths of all pertinent markers and zones. Attach the Bond under which the work will be performed or provide the Bond No. on file with BLM/BIA. Required subsequent reports shall be filed within 30 days following completion of the involved operations. If the operation results in a multiple completion or recompletion in a new interval, a Form 3160-4 shall be filed once testing has been completed. Final Abandonment Notices shall be filed only after all requirements, including reclamation, have been completed, and the operator has determined that the site is ready for final inspection.)

Resolute proposes to attempt repair of the ESP on the subject well. The proposed procedure and wellbore schematics are attached.

14. I hereby certify that the foregoing is true and correct.
Electronic Submission #324152 verified by the BLM Well Information System
For RESOLUTE ANETH, sent to the Farmington

Name *(Printed/Typed)* JIM STYLER — Title PRODUCTION ENGINEER

Signature (Electronic Submission) — Date 11/19/2015

THIS SPACE FOR FEDERAL OR STATE OFFICE USE

Approved By _____ Title _____ Date _____

Conditions of approval, if any, are attached. Approval of this notice does not warrant or certify that the applicant holds legal or equitable title to those rights in the subject lease which would entitle the applicant to conduct operations thereon. Office

Title 18 U.S.C. Section 1001 and Title 43 U.S.C. Section 1212, make it a crime for any person knowingly and willfully to make to any department or agency of the United States any false, fictitious or fraudulent statements or representations as to any matter within its jurisdiction.

**** OPERATOR-SUBMITTED ** OPERATOR-SUBMITTED ** OPERATOR-SUBMITTED ****

RECEIVED: Nov. 19, 2015

Sundry Number: 67893 API Well Number: 43037311300000

FEDERAL APPROVAL OF THIS ACTION IS NECESSARY

STATE OF UTAH
DEPARTMENT OF NATURAL RESOURCES
DIVISION OF OIL, GAS, AND MINING

FORM 9

5.LEASE DESIGNATION AND SERIAL NUMBER:
14-20-603-247A

SUNDRY NOTICES AND REPORTS ON WELLS

Do not use this form for proposals to drill new wells, significantly deepen existing wells below current bottom-hole depth, reenter plugged wells, or to drill horizontal laterals. Use APPLICATION FOR PERMIT TO DRILL form for such proposals.

6. IF INDIAN, ALLOTTEE OR TRIBE NAME:
NAVAJO

7.UNIT or CA AGREEMENT NAME:
RATHERFORD

1. TYPE OF WELL
Oil Well

8. WELL NAME and NUMBER:
RATHERFORD UNIT 13-34 (RE-ENTRY)

2. NAME OF OPERATOR:
RESOLUTE NATURAL RESOURCES

9. API NUMBER:
43037311300000

3. ADDRESS OF OPERATOR:
1700 Lincoln Street, Suite 2800 , Denver, CO, 80203 4535

PHONE NUMBER:
303 534-4600 Ext

9. FIELD and POOL or WILDCAT:
GREATER ANETH

4. LOCATION OF WELL
FOOTAGES AT SURFACE:
0660 FSL 1980 FEL
QTR/QTR, SECTION, TOWNSHIP, RANGE, MERIDIAN:
Qtr/Qtr: SWSE Section: 13 Township: 41.0S Range: 23.0E Meridian: S

COUNTY:
SAN JUAN

STATE:
UTAH

11.
CHECK APPROPRIATE BOXES TO INDICATE NATURE OF NOTICE, REPORT, OR OTHER DATA

TYPE OF SUBMISSION	TYPE OF ACTION		
✓ NOTICE OF INTENT Approximate date work will start: 11/27/2015	☐ ACIDIZE	☐ ALTER CASING	☐ CASING REPAIR
	☐ CHANGE TO PREVIOUS PLANS	☐ CHANGE TUBING	☐ CHANGE WELL NAME
	☐ CHANGE WELL STATUS	☐ COMMINGLE PRODUCING FORMATIONS	☐ CONVERT WELL TYPE
☐ SUBSEQUENT REPORT Date of Work Completion:	☐ DEEPEN	☐ FRACTURE TREAT	☐ NEW CONSTRUCTION
	☐ OPERATOR CHANGE	☐ PLUG AND ABANDON	☐ PLUG BACK
	☐ PRODUCTION START OR RESUME	☐ RECLAMATION OF WELL SITE	☐ RECOMPLETE DIFFERENT FORMATION
☐ SPUD REPORT Date of Spud:	☐ REPERFORATE CURRENT FORMATION	☐ SIDETRACK TO REPAIR WELL	☐ TEMPORARY ABANDON
	☐ TUBING REPAIR	☐ VENT OR FLARE	☐ WATER DISPOSAL
☐ DRILLING REPORT Report Date:	☐ WATER SHUTOFF	☐ SI TA STATUS EXTENSION	☐ APD EXTENSION
	☐ WILDCAT WELL DETERMINATION	✓ OTHER	OTHER: ESP Repair

12. DESCRIBE PROPOSED OR COMPLETED OPERATIONS. Clearly show all pertinent details including dates, depths, volumes, etc.

Resolute Natural Resources respectfully submits this sundry as notice of a repair on the ESP pump on the above well, Attached are the procedures and schematic

Accepted by the Utah Division of Oil, Gas and Mining

Date: November 30, 2015

By: Dark K Quist

NAME (PLEASE PRINT)	PHONE NUMBER	TITLE
Erin Joseph	303 573-4886	Sr. Regulatory Analyst

SIGNATURE	DATE
N/A	11/25/2015

RECEIVED: Nov. 25, 2015

Resolute
Natural Resources

Date: November 24, 2015

Re: RU 13-34 LOE ESP Repair - REVISED PROCEDURE

Procedure - REVISED 11/24/15

Horsley Witten: NO

1) MIRU WSU. LOTO equipment. Test rig anchors as required.
2) RU WL & shift open the sliding sleeve at 5077.5' KB. Kill well as required with circ down tbg, up casing.
3) NDWH. NU BOP. Test BOP.
4) Pick up the 2-7/8" tubing and check the integrity of the cable splice at the tubing hanger. Re-splice if necessary, and if the cable tests OK afterward, re-land tbg, & re-start the ESP. If the problem is not at the tbg hanger splice, continue pulling tubing and check the pothead connection on the ESP.
5) MIRU ESP cable spooler & cap string spooler. Well has 5075' cap string to top of sliding sleeve.
6) Stand back tubing. Call Bill Albert for tubing inspection (970) 371-9682 or Tech Support: Virgil Holly (435) 444-0020 or Nate Dee (435) 730-5442.
7) Inspect/evaluate failed ESP assembly for cause of failure. Replace failed MLE & re-run the equipment if it checks out OK otherwise. If there is additional damage to the ESP beyond the MLE, it will be laid down & returned to Centrilift. New/replacement ESP will be installed - see procedure below.
8) Skip the bit & scraper trip (to 5294' KB/top window) **IF** no sign of scale on pulled equipt, ~ 4 month run.
9) Re-run ESP assembly w/new MLE, Centinel, ESP cable, sliding sleeve w/2.313 'X' profile 2 jts above ESP, cap string to top of sliding sleeve as before; **no check valve**, 2-7/8" tubing. Land near the previous landing depth except for the necessary shortening of the ESP cable for new splices.
10) Pressure test & re-run the existing 1/4" cap string if the condition is generally good.
11) Land tbg w/ ESP assembly bottom no deeper than 5225' KB -or shallower given the cable shortening for new splices.
12) Perform WH penetrator tie-ins at tubing hanger for ESP cable & capillary string and land tubing.
13) ND BOPE. NUWH. Re-connect to VSD and transformer.
14) Perform necessary tests to ensure that the pump is ready to be returned to production.
15) Notify Operations Supervisor Alfred Redhouse (435) 619-7227 that the well is ready to return to production.
16) RDMOL.
17) Hook up appropriate chemical treatment.

RATHERFORD UNIT # 13-34
GREATER ANETH FIELD
Surface Loc 660' FSL & 1980' FEL
SEC 13-T41S-R23E
SAN JUAN COUNTY, UTAH
API 43-037-31130
PRISM 0043010

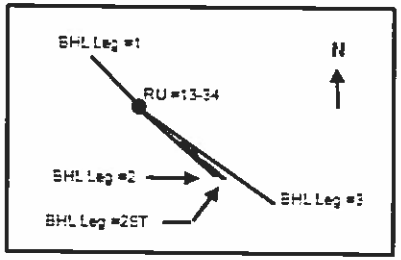
B.H. Location Lateral #1:
910' N & 801' W of Surface Location

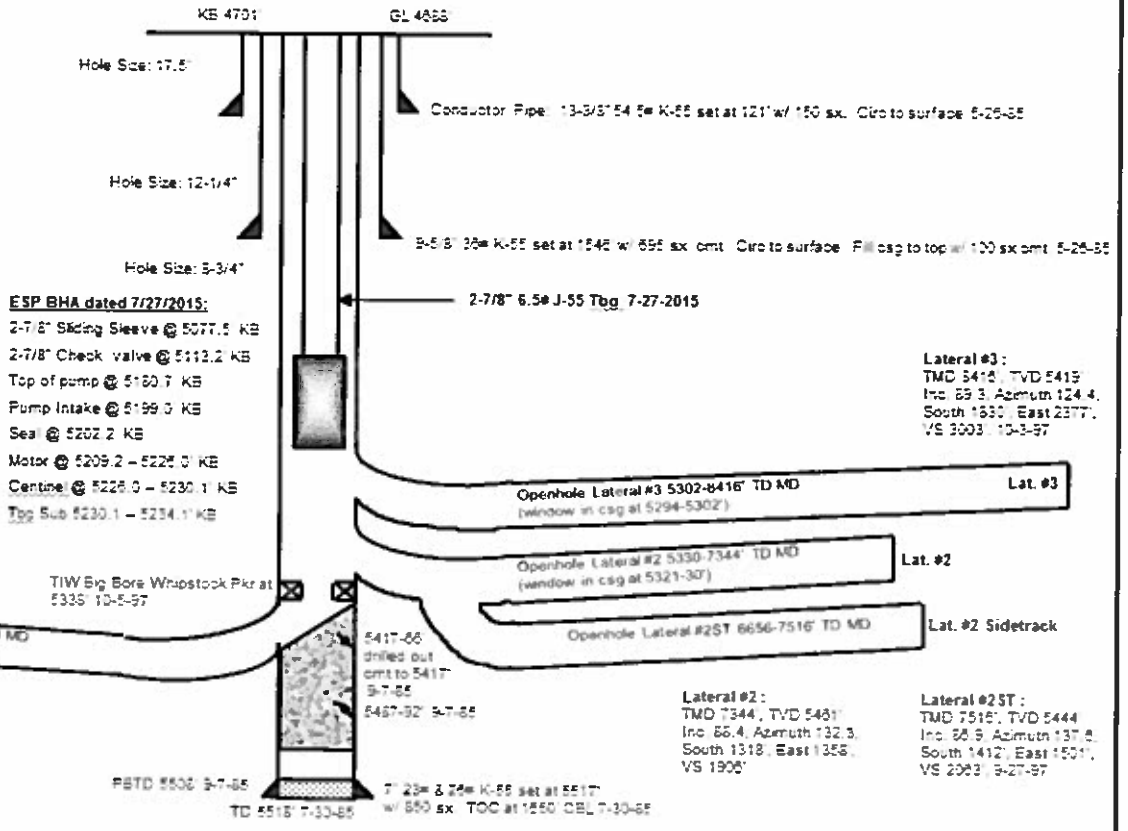
B.H. Location Lateral #2ST:
1412' S & 1501' E of Surface Location

B.H. Location Lateral #2:
1318' S & 1358' E of Surface Location

B.H. Location Lateral #3:
1830' S & 2377' E of Surface Location

PRODUCER





Sundry Number: 69130 API Well Number: 43037311300000

FEDERAL APPROVAL OF THIS ACTION IS NECESSARY

STATE OF UTAH
DEPARTMENT OF NATURAL RESOURCES
DIVISION OF OIL, GAS, AND MINING

FORM 9

5.LEASE DESIGNATION AND SERIAL NUMBER:
14-20-603-247A

SUNDRY NOTICES AND REPORTS ON WELLS

Do not use this form for proposals to drill new wells, significantly deepen existing wells below current bottom-hole depth, reenter plugged wells, or to drill horizontal laterals. Use APPLICATION FOR PERMIT TO DRILL form for such proposals.

6. IF INDIAN, ALLOTTEE OR TRIBE NAME:
NAVAJO

7.UNIT or CA AGREEMENT NAME:
RATHERFORD

1. TYPE OF WELL
Oil Well

8. WELL NAME and NUMBER:
RATHERFORD UNIT 13-34 (RE-ENTRY)

2. NAME OF OPERATOR:
RESOLUTE NATURAL RESOURCES

9. API NUMBER:
43037311300000

3. ADDRESS OF OPERATOR:
1700 Lincoln Street, Suite 2800 , Denver, CO, 80203 4535

PHONE NUMBER:
303 534-4600 Ext

9. FIELD and POOL or WILDCAT:
GREATER ANETH

4. LOCATION OF WELL
FOOTAGES AT SURFACE:
0660 FSL 1980 FEL
QTR/QTR, SECTION, TOWNSHIP, RANGE, MERIDIAN:
Qtr/Qtr: SWSE Section: 13 Township: 41.0S Range: 23.0E Meridian: S

COUNTY:
SAN JUAN

STATE:
UTAH

11.
CHECK APPROPRIATE BOXES TO INDICATE NATURE OF NOTICE, REPORT, OR OTHER DATA

TYPE OF SUBMISSION	TYPE OF ACTION		
✓ NOTICE OF INTENT Approximate date work will start: 1/20/2016	☐ ACIDIZE	☐ ALTER CASING	☐ CASING REPAIR
	☐ CHANGE TO PREVIOUS PLANS	☐ CHANGE TUBING	☐ CHANGE WELL NAME
	☐ CHANGE WELL STATUS	☐ COMMINGLE PRODUCING FORMATIONS	☐ CONVERT WELL TYPE
☐ SUBSEQUENT REPORT Date of Work Completion:	☐ DEEPEN	☐ FRACTURE TREAT	☐ NEW CONSTRUCTION
	☐ OPERATOR CHANGE	☐ PLUG AND ABANDON	☐ PLUG BACK
	☐ PRODUCTION START OR RESUME	☐ RECLAMATION OF WELL SITE	☐ RECOMPLETE DIFFERENT FORMATION
☐ SPUD REPORT Date of Spud:	☐ REPERFORATE CURRENT FORMATION	☐ SIDETRACK TO REPAIR WELL	☐ TEMPORARY ABANDON
	☐ TUBING REPAIR	☐ VENT OR FLARE	☐ WATER DISPOSAL
☐ DRILLING REPORT Report Date:	☐ WATER SHUTOFF	☐ SI TA STATUS EXTENSION	☐ APD EXTENSION
	☐ WILDCAT WELL DETERMINATION	✓ OTHER	OTHER: ESP Repair

12. DESCRIBE PROPOSED OR COMPLETED OPERATIONS. Clearly show all pertinent details including dates, depths, volumes, etc.

Resolute Natural Resources respectfully submits this sundry as notice of ESP repair on the above well. Attached are the procedures and schematic

Accepted by the Utah Division of Oil, Gas and Mining

Date: January 19, 2016

By: Dark K Dunt

NAME (PLEASE PRINT)	PHONE NUMBER	TITLE
Erin Joseph	303 573-4886	Sr. Regulatory Analyst

SIGNATURE	DATE
N/A	1/14/2016

RECEIVED: Jan. 14, 2016

Resolute
Natural Resources

Date: January 12, 2016

Re: RU 13-34 ESP Repair

Procedure

Horsley Witten: NO

1) MIRU WSU. LOTO equipment. Test rig anchors as required.
2) RU WL & shift open the sliding sleeve at 4968' KB. Kill well as required with circ down tbg, up casing.
3) NDWH. NU BOP/H. Test BOPE.
4) Pick up the 2-7/8" tubing and check the integrity of the cable splice at the tubing hanger. Re-splice if necessary, and if the cable tests OK afterward, re-land tbg, & re-start the ESP. If the problem is not at the tbg hanger splice, continue pulling tubing and check the pothead connection on the ESP.
5) MIRU ESP cable spooler & cap string spooler. Well has 4955' cap string to top of sliding sleeve.
6) Stand back tubing. Call Bill Albert for tubing inspection (970) 371-9682, or Tech Support: Virgil Holly (435) 444-0020 or Nate Dee (435) 730-5442. New SMLS 2-7/8 was run 12/16/2015.
7) Inspect/evaluate failed ESP assembly for cause of failure. Replace failed MLE & re-run the equipment if it checks out OK otherwise. If there is additional damage to the ESP beyond the MLE, it will be laid down & returned to Centrilift.
8) Run 5-5/8 swage with jars & DC's to 5294' KB/top window. Work through tight spots at 5189', 5209' & 5230 - 5234' and ensure 7" is open to top window. Larger swage not necessary; only want to verify the casing is open for produced fluid passage.
9) RU Electric line & run casing inspection log from 5294'/top window up to 3500' - or higher if logger's minimum footage comes out higher. RD E-line.
10) Run & set RBP @ ~5150', final set depth to be determined from csg inspection log.
11) RIH open ended & displace the wellbore to inhibited packer fluid. POOH & LD 2-7/8 tubing, installing thread protectors. Leave 40 jts tubing for kill string, landed in B-1 flange. Rig down & Move off.
12) Rig will return after 1) evaluation of the 7" casing, 2) detailed evaluation of the ESP failure (shop teardown), and 3) evaluation for possible Cavins desander equipment.
13) MIRU WSU. Ensure well is dead. ND WH, NU BOP/H & test same.
14) Pull the kill string & retrieve the RBP from ~5150'.
15) Run new ESP assembly, Centinel, ESP cable, sliding sleeve w/2.313 'X' profile 2 jts above ESP, cap string to top of sliding sleeve as before; **no check valve**, 2-7/8" tubing. Landing depth to be determined, pending casing evaluation and possible addition of Cavins equipment.
16) Pressure test & re-run the existing 1/4" x 4955' cap string if not plugged and the condition is OK.
17) Perform WH penetrator tie-ins at tubing hanger for ESP cable & capillary string and land tubing.
18) ND BOPE. NUWH. Re-connect to VSD and transformer.
19) Perform necessary tests to ensure that the pump is ready to be returned to production.
20) Notify Operations Supervisor Alfred Redhouse (435) 619-7227 that the well is ready to return to production.
21) RDMOL.
22) Hook up appropriate chemical treatment.

RATHERFORD UNIT # 13-34
GREATER ANETH FIELD
Surface Loc: 660' FSL & 1980' FEL
SEC 13-T41S-R23E
SAN JUAN COUNTY, UTAH
API 43-037-31130
PRISM 0043010

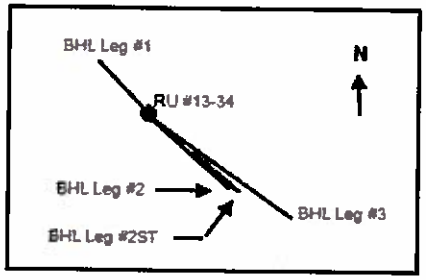
B.H. Location Lateral #1:
910' N & 801' W of Surface Location

B.H. Location Lateral #2ST:
1412' S & 1501' E of Surface Location

B.H. Location Lateral #2:
1318' S & 1358' E of Surface Location

B.H. Location Lateral #3:
1830' S & 2377' E of Surface Location

PRODUCER



STATE OF UTAH
DEPARTMENT OF NATURAL RESOURCES
DIVISION OF OIL, GAS, AND MINING

FORM 9

SUNDRY NOTICES AND REPORTS ON WELLS

Do not use this form for proposals to drill new wells, significantly deepen existing wells below current bottom-hole depth, reenter plugged wells, or to drill horizontal laterals. Use APPLICATION FOR PERMIT TO DRILL form for such proposals.

5.LEASE DESIGNATION AND SERIAL NUMBER: 14-20-603-247A

6. IF INDIAN, ALLOTTEE OR TRIBE NAME: NAVAJO

7.UNIT or CA AGREEMENT NAME: RATHERFORD

1. TYPE OF WELL Oil Well

8. WELL NAME and NUMBER: RATHERFORD UNIT 13-34 (RE-ENTRY)

2. NAME OF OPERATOR: RESOLUTE NATURAL RESOURCES

9. API NUMBER: 43037311300000

3. ADDRESS OF OPERATOR: 1700 Lincoln Street, Suite 2800 , Denver, CO, 80203 4535

PHONE NUMBER: 303 534-4600 Ext

9. FIELD and POOL or WILDCAT: GREATER ANETH

4. LOCATION OF WELL
FOOTAGES AT SURFACE: 0660 FSL 1980 FEL
QTR/QTR, SECTION, TOWNSHIP, RANGE, MERIDIAN: Qtr/Qtr: SWSE Section: 13 Township: 41.0S Range: 23.0E Meridian: S

COUNTY: SAN JUAN

STATE: UTAH

11. CHECK APPROPRIATE BOXES TO INDICATE NATURE OF NOTICE, REPORT, OR OTHER DATA

TYPE OF SUBMISSION	TYPE OF ACTION		
☐ NOTICE OF INTENT Approximate date work will start:	☐ ACIDIZE	☐ ALTER CASING	☐ CASING REPAIR
✓ SUBSEQUENT REPORT Date of Work Completion: 7/28/2015	☐ CHANGE TO PREVIOUS PLANS	☐ CHANGE TUBING	☐ CHANGE WELL NAME
☐ SPUD REPORT Date of Spud:	☐ CHANGE WELL STATUS	☐ COMMINGLE PRODUCING FORMATIONS	☐ CONVERT WELL TYPE
☐ DRILLING REPORT Report Date:	☐ DEEPEN	☐ FRACTURE TREAT	☐ NEW CONSTRUCTION
	☐ OPERATOR CHANGE	☐ PLUG AND ABANDON	☐ PLUG BACK
	☐ PRODUCTION START OR RESUME	☐ RECLAMATION OF WELL SITE	☐ RECOMPLETE DIFFERENT FORMATION
	☐ REPERFORATE CURRENT FORMATION	☐ SIDETRACK TO REPAIR WELL	☐ TEMPORARY ABANDON
	☐ TUBING REPAIR	☐ VENT OR FLARE	☐ WATER DISPOSAL
	☐ WATER SHUTOFF	☐ SI TA STATUS EXTENSION	☐ APD EXTENSION
	☐ WILDCAT WELL DETERMINATION	✓ OTHER	OTHER: 1st ESP Replacement

12. DESCRIBE PROPOSED OR COMPLETED OPERATIONS. Clearly show all pertinent details including dates, depths, volumes, etc.

Resolute Natural Resources respectfully submits this sundry as notice of the first ESP replacement that was completed on 7/28/15

Accepted by the Utah Division of Oil, Gas and Mining
FOR RECORD ONLY
January 21, 2016

NAME (PLEASE PRINT)	PHONE NUMBER	TITLE
Erin Joseph	303 573-4886	Sr. Regulatory Analyst
SIGNATURE		**DATE**
N/A		1/20/2016

RECEIVED: Jan. 20, 2016

STATE OF UTAH
DEPARTMENT OF NATURAL RESOURCES
DIVISION OF OIL, GAS, AND MINING

FORM 9

SUNDRY NOTICES AND REPORTS ON WELLS

Do not use this form for proposals to drill new wells, significantly deepen existing wells below current bottom-hole depth, reenter plugged wells, or to drill horizontal laterals. Use APPLICATION FOR PERMIT TO DRILL form for such proposals.

5.LEASE DESIGNATION AND SERIAL NUMBER: 14-20-603-247A

6. IF INDIAN, ALLOTTEE OR TRIBE NAME: NAVAJO

7.UNIT or CA AGREEMENT NAME: RATHERFORD

1. TYPE OF WELL Oil Well

8. WELL NAME and NUMBER: RATHERFORD UNIT 13-34 (RE-ENTRY)

2. NAME OF OPERATOR: RESOLUTE NATURAL RESOURCES

9. API NUMBER: 43037311300000

3. ADDRESS OF OPERATOR: 1700 Lincoln Street, Suite 2800 , Denver, CO, 80203 4535

PHONE NUMBER: 303 534-4600 Ext

9. FIELD and POOL or WILDCAT: GREATER ANETH

4. LOCATION OF WELL
FOOTAGES AT SURFACE: 0660 FSL 1980 FEL
QTR/QTR, SECTION, TOWNSHIP, RANGE, MERIDIAN: Qtr/Qtr: SWSE Section: 13 Township: 41.0S Range: 23.0E Meridian: S

COUNTY: SAN JUAN

STATE: UTAH

11. CHECK APPROPRIATE BOXES TO INDICATE NATURE OF NOTICE, REPORT, OR OTHER DATA

TYPE OF SUBMISSION	TYPE OF ACTION		
☐ NOTICE OF INTENT Approximate date work will start:	☐ ACIDIZE	☐ ALTER CASING	☐ CASING REPAIR
✓ SUBSEQUENT REPORT Date of Work Completion: 2/4/2016	☐ CHANGE TO PREVIOUS PLANS	☐ CHANGE TUBING	☐ CHANGE WELL NAME
☐ SPUD REPORT Date of Spud:	☐ CHANGE WELL STATUS	☐ COMMINGLE PRODUCING FORMATIONS	☐ CONVERT WELL TYPE
☐ DRILLING REPORT Report Date:	☐ DEEPEN	☐ FRACTURE TREAT	☐ NEW CONSTRUCTION
	☐ OPERATOR CHANGE	☐ PLUG AND ABANDON	☐ PLUG BACK
	☐ PRODUCTION START OR RESUME	☐ RECLAMATION OF WELL SITE	☐ RECOMPLETE DIFFERENT FORMATION
	☐ REPERFORATE CURRENT FORMATION	☐ SIDETRACK TO REPAIR WELL	☐ TEMPORARY ABANDON
	☐ TUBING REPAIR	☐ VENT OR FLARE	☐ WATER DISPOSAL
	☐ WATER SHUTOFF	☐ SI TA STATUS EXTENSION	☐ APD EXTENSION
	☐ WILDCAT WELL DETERMINATION	✓ OTHER	OTHER: ESP Repair

12. DESCRIBE PROPOSED OR COMPLETED OPERATIONS. Clearly show all pertinent details including dates, depths, volumes, etc.

Resolute Natural Resources respectfully submits this sundry as notice that the ESP Repair on the above well was completed on 2/4/2016

Accepted by the Utah Division of Oil, Gas and Mining
FOR RECORD ONLY
February 16, 2016

NAME (PLEASE PRINT)	PHONE NUMBER	TITLE
Erin Joseph	303 573-4886	Sr. Regulatory Analyst
SIGNATURE		**DATE**
N/A		2/16/2016

RECEIVED: Feb. 16, 2016